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VOLUME FOUR NUMBER FIVE DOLLAR A YEAR

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November 1909—Irrigation Edition

PUBLISHED BY BETTER FRUIT PUBLISHING COMPANY, HOOD RIVER, OREGON

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The Northwest affords the greatest opportunities of the World today

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C. R. Paddock, *Manager* NORTH YAKIMA, WASHINGTON

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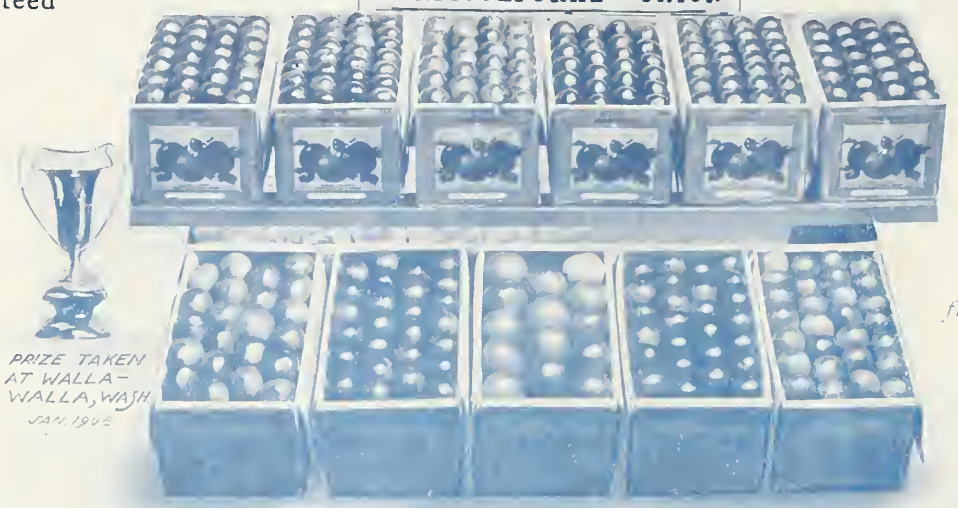
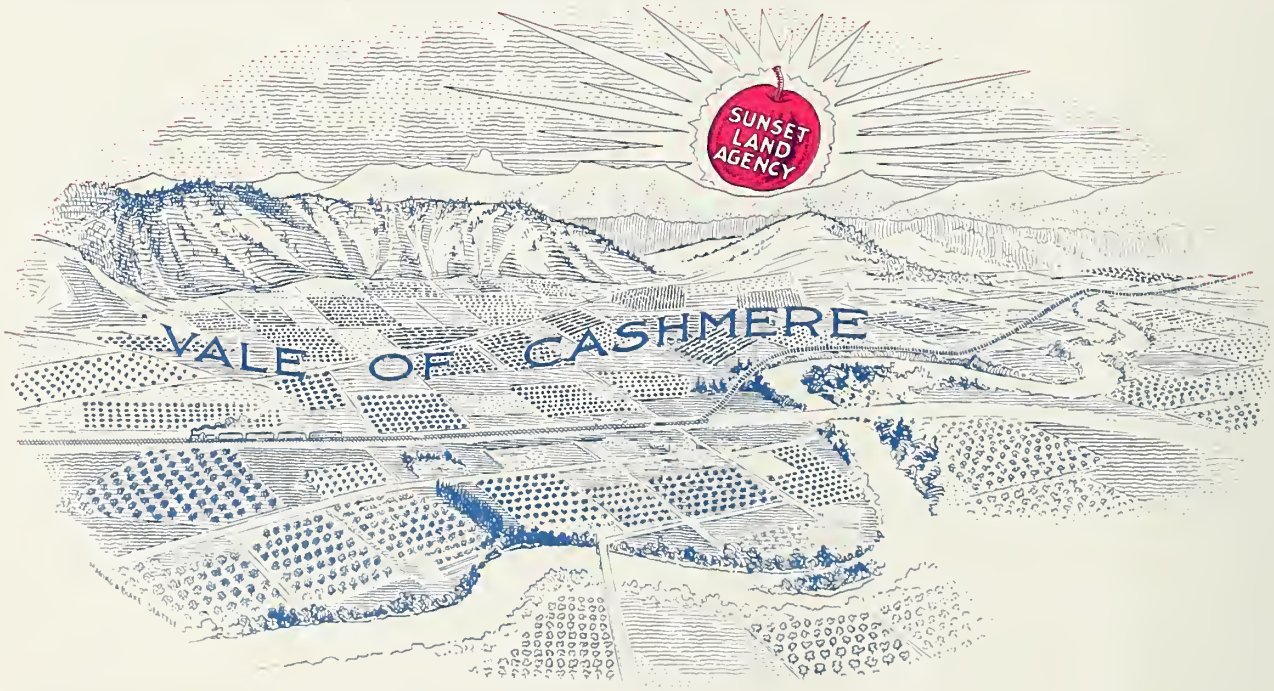
Apples, Peaches, Pears, Prunes, Plums, Cherries, Grapes, Apricots and Cantaloupes



Prize Winners from North Yakima, Washington

WE USE REVISED ECONOMY AND MODERN CODES

Three Hundred Practical Fruit Growers are Members of this Union



A. H. MOHLER, Manager

SUNSET LAND AGENCY

Cashmere, Washington

THE VALE OF CASHMERE Is what made the Wenatchee Valley famous. It is in the center of the valley and is the place where the prize apples are grown. For beautiful scenery, productiveness and fertility of soil, genial and healthful climate and happy homes, it cannot be beat. It is not paradise, but is the next thing to it. Ten acres of its soil yields its possessor a princely income, and five acres will support its owner in luxury. Average income from one acre is about $500.00 net. It is not a new country. It is fully developed. Has the best churches, schools, societies, etc., good roads and bridges, cities, towns and markets. No pioneering. Land is worth from $300.00 to $1,500.00 per acre.

BARGAINS

10½ acres, bearing orchard, commercial varieties; good buildings, well, soil and water right; personal property goes with place; one miles from town. Price $12,000; terms on part.

2½ acres bearing orchard, in city limits; has good buildings, well and water right; is just the place you want. Price $3,000; terms on part.

We have many other bargains. Write and tell us what you want. We will gladly send you any information. Reference: Farmers and Merchants Bank and Cashmere State Bank.

Address all communications to SUNSET LAND AGENCY, Cashmere, Washington

E. P. LOOMIS & CO.

Established 1868

95-97-99 Barclay Street New York City, N. Y.

To all Growers of Fancy Box Apples

This is the year to ship on consignment to an old established house that has for years made a specialty of selling box apples to a large high-class trade who pay top prices for fancy stock.

We can sell your shipments on arrival and mail you account sales with check for net proceeds the same day the stock is sold, or we will hold any variety you wish, in our cold storage warehouse, for late spring sale, or whenever you think best. Our

NEW YORK CITY MARKET

the broadest market in this country, will take at the highest prices fancy

Spitzenbergs, Newtowns, Winesaps, Jonathans, Rome Beauties, Arkansas Blacks, Winter Bananas, Delicious and Red Ganos

We make reasonable advances on all consignments, if shippers desire *Write to us and get acquainted*

One of our firm visits all the apple sections in Colorado, Oregon, Washington and Idaho, every year, from August 1 to October 15. Let us know where you are and we will call on **you** and give you all the information we can that will help you market your goods to the best advantage. Among our regular and satisfied shippers are: The Wenatchee Produce Company, Wenatchee, Washington; Nelson Bros. Fruit Company, Paonia, Colorado; M. M. Hill, Frank Stanton and Wilson Fike, owning three of the finest orchards in Hood River Valley, Oregon; J. M. Perry & Co., North Yakima, Washington. If you want more information as to our reliability and financial responsibility, write to any of the above mentioned, as well as our good friend Edward H. Shepard, the editor of the best fruit magazine in the world, "Better Fruit."

BOX APPLES ARE OUR SPECIALTY

but we can sell your Peaches, Pears and Italian Prunes as well as any other receiver in New York City

Don't Forget New York City's Enormous Market, High Prices for Fancy Stock, Quick Sales and Quick Returns and Yours Truly

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THAN ANY OTHER CONCERN IN THE COUNTRY

and was the first fruit house to extensively introduce the Northwestern product to the consumers of the East. With able representation in all the leading markets STEINHARDT & KELLY are enabled to handle the entire crops of the most extensive districts with utmost ease and celerity

CORRESPONDENCE WITH ASSOCIATIONS, UNIONS AND INDIVIDUAL GROWERS WILL BE GIVEN PERSONAL ATTENTION

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California, Oregon, Washington, Idaho and Florida fruits. Apples handled in all European markets Checks mailed from our New York office same day apples are sold on the other side. We are not agents we **sell apples.** We make a specialty of handling cherries, apricots, peaches and all early fruits on the New York market. Correspondence solicited.

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Burlington, Davenport, Cedar Rapids, Ottumwa,
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Want Cars of Apples, Peaches, Pears, Etc.

Also Handle Vegetables in Carload Lots

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Apples for American and Foreign Markets

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Market Quotations and Full Particulars on Application Correspondence Invited

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For Market Information Address:

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Superior facilities for handling

PEACHES APPLES AND PEARS

Solicit Your Consignments

Reliable Market Reports Prompt Cash Returns

McEWEN & KOSKEY

Wholesale Fruit and Produce and General Commission Merchants

129 Front Street, Portland, Oregon

CONSIGNMENTS

Are solicited, all your shipments receiving our personal attention

THE
DAVIDSON FRUIT CO.
of
HOOD RIVER, OREGON

Pioneer fruit packers and shippers of this famous section. "Quality" is our watchword, and "Fruit Worth the Price" is our motto. Wire or write us for apples, strawberries or pears in season, in car lots or smaller shipments. Other fruits in season in less quantities.

Salem Fruit Union

SALEM, OREGON

Packers and shippers of the

CHERICITTI BRAND OF

PLUMS, PEARS APPLES

Strawberries, Loganberries
Raspberries, Currants, Goosberries
Cherries, Etc., in Season

Apple Storage

ST. LOUIS is the best local market and distributing point to ship your apples, and hold on cold storage, for highest winter prices.

Oregon, Washington and Idaho

Fruit Associations Growers and Shippers

I solicit your carload shipments of box apples this fall for cold storage here. **Will advance freights and pay insurance,** charging usual commission and interest.

Storage rates 15 cents per box for season ending May 1.

Only Extra Fancy Fruit wanted

I do business with the Mound City Ice and Cold Storage Company, the largest and most modern apple storage house in the middle West. Cars unloaded direct into coolers.

F. S. Timberlake

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Bank and Other References

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HELENA, MONTANA

Established in Helena Quarter of a Century

Branch houses: Great Falls, Missoula and Billings, Montana

YAKIMA COUNTY HORTICULTURAL UNION

North Yakima, Washington

C. R. Paddock, Manager

Apples, Pears, Peaches, Cherries, Plums, Prunes, Apricots, Grapes and Cantaloupes

Mixed carloads start about July 20. Straight carloads in season. Our fruit is the very best grade; pack guaranteed

We use Revised Economy Code

Ryan & Newton Company

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Spokane, Wash.

We have modern cold storage facilities essential for the handling of your products

Reliable Market Reports

PROMPT CASH RETURNS

FRUIT FACTS

Chelan County won 35 gold medals on fruit exhibits at the Portland Exposition, 1905. This record was not equaled by any other county on the Pacific Coast. We will have 75 to 100 cars of apples, Winesaps, Spitzenbergs, Rome Beauties, Lawvers, Jonathans, etc., all packed under the supervision of this association. Correspondence solicited.

Wenatchee Valley

Fruit Growers' Association

Wenatchee, Washington

M. O. Tibbetts, Pres. E. T. Balch, Sec.

NEW ORLEANS

The Acknowledged Fancy Fruit House of New Orleans

IMPORTERS JOBBERS

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All Fruits in Season

Wholesale Commission

STORAGE FOR SIXTY CARS

The Largest Exclusive Fruit Concern in the South

Richey & Gilbert Co.
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Growers and Shippers of
YAKIMA VALLEY
FRUITS AND PRODUCE
Specialties: Apples, Peaches
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TOPPENISH, WASHINGTON

Established 1884
S. Segari & Company
Commission Merchants
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APPLES OUR SPECIALTY
The largest handlers of barrel and box Apples in the entire South.
Office
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WHOLESALE FRUITS
and
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Apples, Peaches and Strawberries
127 South Water Street
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Consignments solicited with quick returns
FRUITS, PRODUCE
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Telephone A 5758
206 Stark St., Portland, Oregon
Between Front and First Streets

FAMOUS HOOD RIVER
Strawberries
The Finest
Berry on Earth and
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Look Good, but Taste Better
Fancy Pack Guaranteed
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SOLICIT YOUR CONSIGNMENTS
Top Prices and Prompt Returns
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Look Good, Taste Better, Sell Best
Grade and Pack Guaranteed
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Hood River, Oregon

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Earl Fruit Company
Sacramento, California

The proper handling and distribution of deciduous

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in car lots, guaranteed by ten years' actual experience

Investigate us as to experience, ability and responsibility

Your Correspondence Solicited

Our Daily Market Letter Is Yours for the Asking

John H. Simon

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119 Dock Street *and* 244 South Front Street

PHILADELPHIA, PA.

Ira J. Nelson, *President* M. Clay
Clarance Nelson, *Secretary*

THE

Nelson Bros. Fruit Co.

PAONIA, COLORADO

We will make a specialty of filling f. o. b. orders on Elberta Peaches and high grade Jonathan, Rome Beauty and other North Fork Apples this season, and invite correspondence from those who will be in the market to buy. Let us put your name on our list, and we will keep you advised and quote you when shipments are ready to move.

Established 1849 Incorporated 1907

The

B. Presley Co.

Wholesale Fruits

St. Paul

We handle annually 1,500 Cars Fresh Green Fruits

Write us on Apples, Peaches, Prunes, Pears and anything else in our line which you may have to offer

The

Lawrence - Hensley Fruit Co.

Successors to
THE LIEBHARDT FRUIT CO.

Jobbers of

Fruits and Vegetables

and Apple Packers

DENVER, COLORADO

SGOBEL & DAY

NEW YORK

APPLES, PEARS, PRUNES

QUALITY
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QUALITY

J. GRANGER & CO.

Lincoln, Nebraska

Wholesale Fruit Merchants

Largest receivers and distributers of Western apples, strawberries, raspberries and blackberries in Nebraska. Send us your shipments. We will get you the highest market prices and remit promptly

Correspondence Cheerfully Answered

References: Corn Exchange National Bank, Chicago, Illinois; Chatham National Bank, New York City; First National Bank, Lincoln, Nebraska; Richey & Gilbert Company, Toppenish, Washington; Yakima County Horticultural Union, North Yakima, Washington

N. A. Lewis, *President* W. E. Vidger, *Sec'ty*
F. C. Gardner, *Vice-Pres.* A. L. Loomis, *Treos.*

The Lewis-Vidger-Loomis Co.

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Houses ot

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FRUIT AND COMMISSION MERCHANTS

Cipher Codes: Revised Economy, Modern Economy, Earl Fruit Company

References: Merchants National Bank, Fargo National Bank, Commercial Bank

CORRESPONDENCE SOLICITED

Correspondence Solicited

RYAN & VIRDEN CO.

BUTTE, MONTANA

Bronch Houses:
Livingstone, Billings, Sheridan, Montana; Lewiston, Idaho.

Wholesale Fruit and Produce

WE HAVE MODERN COLD STORAGE FACILITIES ESSENTIAL FOR HANDLING YOUR PRODUCTS

A strong house that gives reliable market reports *and prompt cash returns*

Davenport Bros.

Portland, Oregon

WHOLESALE

FRUIT & PRODUCE

Growers and Shippers of the Famous

Mosier Valley Fruits

FRUIT

We Want all Kinds—Apples, Pears, Peaches, Etc.

Correspond With

HJORTH & GOODMAN

Wholesale Exclusive Fruits ST. PAUL, MINNESOTA

White Salmon Orchard Lands

At Special Prices this Month

Situated in the famous White Salmon Valley, directly opposite the Hood River Valley, seventy-five miles east of Portland, twenty-five miles from Cascade Range, on the beautiful Columbia River. Half way between Mount Hood on the south and Mount Adams on the north.

One of the few districts where good orchard lands can be bought at reasonable prices on easy payments. In the following list are a few of our best tracts at special prices for this month. Prices on business and town property on application to

WHITE SALMON REALTY CO.

WHITE SALMON, WASH.

303—20-acre ranch 2 miles out; 3½ acres in strawberries, 10 acres slashed, 5 under cultivation; house, well; no stone or waste land; southern slope, best of soil; new strawberry plants set out this spring, now bearing, 60 days after being planted, proving this is exceptionally rich soil; fine view of Mount Hood; 10 acres in the virgin forest. An ideal place for a country home. Only $175 per acre; $2,000 cash, balance 3 years at 8 per cent.

304—30 acres near Husum, unimproved, on county road. The land on all sides of this 30 is being improved and sells for $200 to $350 per acre. Has a fine spring; most of the land is nearly level; good heavy timber, mostly fir; 1 mile from the White Salmon River; most of the land could be irrigated from the spring on place; some small stones, easily removed. Land in this section is very scarce; the railroad when built will pass up this valley and this tract will be on the main line; road passes on east side and may cut off 1 or 2 acres. Price for a quick sale, $165 per acre; one-half cash, balance 2 years at 8 per cent.

305—Three 40-acre tracts (120 acres) adjoining, 4 miles by present road from White Salmon; only 2½ miles by new road to be built; high elevation, red shot soil, west and south slope, spring water; fine view of Mount Adams, Mount Hood and Columbia River. Tract A has fine stand of timber; little or no waste land. Price, only $90 per acre; terms one-half cash, balance 3 years at 8 per cent.

Tract B, 40 acres, adjoining Tract A on the west. More rolling, and some land could not be used for fruit; west slope, red shot and black loam soil, good drainage, and a snap at the present price of only $75 per acre; terms, one-half cash, balance 3 years at 8 per cent.

Tract C, 40 acres, adjoining Tract B on the north; similar land and soil, but more rolling; would make an ideal fruit ranch and country home near town; some land could not be used for fruit; quite rolling in places. For a short time we will offer this 40 at only $50 per acre. It is the cheapest buy at this price near White Salmon. Terms, 3 years.

306—160-acre tract near Gilmer, 8 miles from Husum, 6 miles to postoffice; will be on county road when completed; has three good springs; lies nearly level, with a southerly slope; 2½ acres in alfalfa, 3½ acres cleared; all fenced; cleared land fenced separate, allowing stock to use balance of land while clearing. We will sell this land as it stands for $35 per acre. We will clear it of all trees up to 16-inch for $50 per acre, or clear all and plant to trees (same furnished by purchaser) for $100 per acre, or sell you the 160 and put in the orchard all for $150 per acre. Same land near town under same improvements costs $350 to $500 per acre.

328—10 acres 1 miles from city limits; wild land, easily cleared; south slope; early strawberry land close in to market. If sold this month will sell for $175 an acre.

332—Nearly 60 acres near Columbia River; 20 acres cleared, 11 of which are in orchard; 150 bearing trees; house and other buildings; springs on place; 20 acres pasture; 3 miles to station, 9 miles by road to White Salmon, 4 miles by section line; fine mountain and river scenery. Price only $100 per acre.

336—160 acres 19 miles out; A No. 1 land; best buy in fruit land at the price of $25 per acre. Spring water, meadow of 3 acres, and good orchard land. Price on this is for an immediate sale to meet obligations. Half cash, balance 3 years.

337—160 acres in the town of Gilmer, near the Mount Adams Orchard Company lands. This 160 slopes to the west and south, rolling, with good drainage; red shot soil; near postoffice, mail daily except Sunday. Compare land and prices with lands near and you will admit this is a snap at only $25 per acre.

339—10-acre ranch partly improved, mile out; 3 acres in bearing strawberries; 6 acres under plow; house and packing shed; some timber; south and west slope; fine view of Mount Hood and river. Owner called away and must close out at once, thus the price of only $400 per acre; half cash, balance in 3 years at 8 per cent.

347—43½ acres 5 miles out on main road; 15 acres in orchard 2 years old, 35 acres under cultivation; house, barn and spring on place; one of the best bargains in the valley. The raw land is worth $100 per acre, clearing and putting into cultivation cost $100 per acre, a total of $200 per acre or $8,700, to say nothing of fruit (3½ acres), all ready to bear next season, and 500 other fruit trees 1 and 2 years old, buildings, etc. For a quick sale the entire ranch can be bought for $175 per acre, or $25 per acre less than it cost to buy and clear the land. Terms, half cash, balance 3 years at 8 per cent.

348—53½ acres adjoining Tract 347; partly improved; 20 acres in 2-year-old Spitzenbergs and Newtowns; 2 acres bearing orchard; balance easily cleared; house, barn and 2 springs on place; on main county road 5 miles out; fine view of both Mount Hood and Mount Adams. Price only $175 per acre; half cash, balance 3 years at 8 per cent.

349—40 acres, with new modern bungalow just completed; 2 acres bearing orchard, 10 acres in 4-year-old Spitzenbergs, balance of land easily cleared; spring and well water. Located on main road 4½ miles out, in plain view of mountains. Price $7,500, on easy terms.

350—40 acres, with 3 acres in bearing apples, cherries, peaches and pears; house and barn; 3 springs on place; 14 miles from White Salmon; stage passes within 1 mile of ranch. For a quick sale, only $75 an acre; $1,000 cash, balance 5 years at 7 per cent.

351—80 acres 8 miles out, $35 per acre.

352—80 acres 9 miles out, $25 per acre.

353—20 acres 9 miles out, all good orchard land, at only $65 per acre; terms.

354—22 acres near Husum; 18 acres under plow, 15 acres in apple orchard; spring water on place; 6 miles to railway, 1 mile to postoffice; in the famous White Salmon River Valley (half mile from river) where good orchard land is scarce. Only $275 per acre; half cash, balance 3 years at 8 per cent.

355—40 acres 7 miles from White Salmon; all good level orchard land; on main county road; 2 acres now cleared. Only $100 per acre; easy terms.

356—10 acres adjoining the McCraken ranch near Husum; 2 acres under plow, balance easily cleared. Only $135 per acre.

357—55 acres 3 miles from Husum, on Trout Lake road; one-half is best of orchard land; balance has some stone. Only $75 per acre, if sold this month; easy terms.

358—40 acres 7 miles out, in well known "Apple Center" district, near the Pyatt-Zeigler bearing orchards; same soil, elevation, etc.; on main county road; all good orchard land. Price $90 per acre; terms.

359—40 acres adjoining No. 358, with 10 acres cleared and 3 in bearing orchard; house, barn, etc. A snap at only $100 an acre.

360—40 acres adjoining No. 359; good orchard land, with good stand of fir, that could be used for buildings; on county road. Only $90 per acre.

361—40 acres adjoining the Zeigler orchard; some rolling, 25 acres A No. 1 fruit land. For a quick sale only $75 per acre.

Large and small tracts, wild or improved, to suit purchaser, having over 1,000 acres to choose from, at $25 per acre up.

WHITE SALMON REALTY CO.

WHITE SALMON, WASH.

White Salmon Valley

WASHINGTON

Across the river from Hood River Valley, Oregon, in the Banner Apple Belt of the World

The WHITE SALMON VALLEY today presents OPPORTUNITIES FOR INVESTMENT beyond that of any other FRUIT REGION in the Northwest. It is the north half of a LARGE VALLEY lying between Mount Adams on the north and Mount Hood on the south. The mighty Columbia flows between and divides this valley. From the Columbia River to Mount Hood forms the Hood River Valley, and from the Columbia River to Mount Adams forms the White Salmon Valley. Both these mountains are snowclad all the year and influence the climatic conditions. This, together with a volcanic ash soil, produces apples that are superior to all others in the world in FLAVOR, SIZE, COLOR, and, most important of all, KEEPING AND SHIPPING QUALITIES.

Ninety per cent of the fruit grown in this valley is exported, bringing the highest market prices.

THE CLIMATE of this region is ideal. It is located in the midst of the CASCADES, with a pure mountain air and free from excessive rains or drouth. The snow-covered peaks at either end of the valley temper the heat of summer and make the summer nights cool and invigorating. The winters are as a rule mild and short. The scenery is as fine as may be found anywhere on the continent.

The valley has been held back heretofore through lack of railroad transportation, but the SPOKANE, PORTLAND & SEATTLE RAILROAD, part of the Hill system, now in operation, gives this valley the best of shipping facilities.

NOW IS THE TIME TO SECURE A CHOICE ORCHARD TRACT AT A LOW FIGURE. Write today for particulars of this wonderful valley to the

WHITE SALMON VALLEY DEVELOPMENT LEAGUE, WHITE SALMON, WASHINGTON

The Beautiful White Salmon Valley

LAND AS AN INVESTMENT IN THE WHITE SALMON VALLEY

WHILE we, of this favored spot, would rather see bona fide settlers come among us and acquire land and devote their time and attention to fruit raising, we are not slighting the advantages offered to investors. It is a well known fact that land, especially in this locality, never decreases in value, but rather increases. A man may see the savings of a year disappear through frenzied speculation of unscrupulous bank officials, but when those same savings are invested in land in this locality, which is rapidly coming to the front as a fruit raising country, and is being settled up and improved, the value of those savings will multiply many times. You can buy unimproved fruit land in small or large tracts at $50 to $150 per acre; the same land is equal to lands in Hood River that are selling for $500 to $2,000 per acre. Yellow Newtown apples on this land have netted at the rate of $1,600 an acre for one crop. INVESTOR, what will the same land be worth one year from now? What do you think of a savings account in Nature's great bank? It is always there, payable on demand. We cannot promise that these prices will prevail six months from now. Take our advice and look it up now; do not delay. It will mean prosperity and comfort for you and those who are depending upon you.

For booklet and pictures describing the White Salmon valley, write or call upon us.

An Ideal Home

No. 250—80 acres of land in White Salmon valley, directly opposite Hood River, Oregon, and located in most desirable section, only 1½ miles from station of Underwood, Washington, on the new Spokane, Portland & Seattle Railway; about 20 acres cleared; Spitzenberg and Winter Banana apple trees in third year; 9 or 10 acres of best strawberries, giving handsome returns and insuring good living now; orchard of peaches, prunes, cherries, pears and grapes; large tract of beaver dam land, suitable for celery, asparagus, melons, etc.; abundance of water from springs for domestic use and irrigation; new two-horsepower gasoline engine and large capacity pressure pump; 600 feet of two-inch galvanized iron pipe, fire hose, etc.; new 1,500-gallon patent redwood tank on 30-foot tower; new house containing 6 rooms, with cellar, hot and cold water.

A Good Home

No. 247—23 acres, 6 of which are planted to Newtown and Spitzenberg apples; 13 acres ready to plant; good stream of water running through place; good well; land can be irrigated. Price $6,900; terms.

A Good Buy

No. 254—80 acres, in the Trout Lake country, all level and free from rock; 50 acres in meadow; abundance of water. This we consider the best buy in the Trout Lake country. $2,000 cash, balance 5 years.

Fine Investment

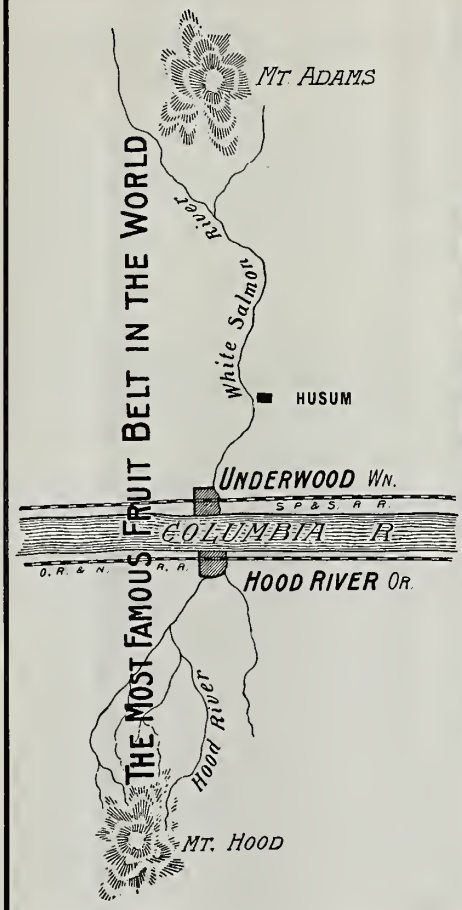
No. 253—80 acres 6 miles from White Salmon; good bearing apple orchard of 18 acres; 15 acres more ready to plow; plenty of spring water; good house and barn; all stock and farm machinery on the place are included, which amounts to about $5,000. Price $16,000. For itemized list of everything that goes with this place, write us at once.

Desirable Location

No. 255—6¼ acres 5 miles from White Salmon, on the White Salmon river; about 5 acres cleared and planted to apple trees and strawberries; small house and an abundance of water. This is the choicest small home in the White Salmon valley. Price $4,500; terms.

We have a big list of other lands for sale at a bargain. Write for particulars to

Egan-Hair Real Estate Co. White Salmon, Washington



UNDERWOOD

The Gateway to the White Salmon Valley

WHITE SALMON VALLEY FRUIT GROWERS' UNION OF UNDERWOOD, WASHINGTON, Won Three Important Premiums at Spokane—First on Best Four-Tier Newtowns, Second on Best Ten Boxes Newtowns, First on Best Pack.

Twenty minutes from Hood River by ferry. Two hours by rail, seven hours by boat from Portland. Twenty-five thousand acres first-class fruit land tributary to this point. Has a strong Apple Growers' Union, which controls the output of the valley. Same fruit, same markets, same prices as Hood River has. Fine class of people coming in—a community of *homes*. Land close in to river and railroad $40.00 to $150.00 an acre *now*, but advancing rapidly.

Write, phone or call on

W. F. CASH UNDERWOOD WASHINGTON

Splendid Opportunity for a Good Investment

A chance of a lifetime to secure Ten Acres of Choice Apple Land at only $100 per acre

20 Acres for $1975 **30 Acres for $2900** **40 Acres for $3750**

White Salmon Valley Apples at Hood River Fair

These tracts are located only four miles from Hood River, across the Columbia River, at Underwood, Washington, in the famous White Salmon Valley, with a grand view of the Columbia River and Hood River Valley. No waste land; all rich, deep soil; good, natural air and water drainage; no frost. Address owner

C. R. GREISEN, Hood River, Oregon

WHITE SALMON VALLEY

WASHINGTON

Lies directly across the Columbia River from Hood River, Oregon. Identical in climatic conditions and quality of soil, consisting of volcanic ash, with a clay subsoil, which keeps the moisture near the surface even in the driest seasons, thereby making irrigation unnecessary; thus producing fruit which for flavor, size, color and, most important of all, keeping and shipping qualities, is unequaled by that of any other section in the world. This fruit commands the highest prices in the markets. Located on the main line of the Spokane, Portland & Seattle Railway and the Columbia River navigation companies, thus giving splendid shipping facilities. Scenically: "The Switzerland of America." Climatically: Ideal for horticulture and health. Socially: Peopled with families and young men of high intelligence. Commercially: It presents opportunities unequaled in any fruit district. Are you thinking of such a proposition? Then investigate and you will be one of us.

A Pair of Seven-Year-Olds in White Salmon Valley. From the Tree Eighteen Boxes of Apples were Packed

Partial List

White Salmon Land Co.
White Salmon, Washington

182—10 acres ¼ mile from White Salmon; 9 acres in cultivation; 8 acres in Spitzenberg and Newtown trees, with a few Arkansas Blacks; 1 acre unimproved. This location cannot be surpassed for a home and commercial orchard. Price $3,500; terms.

183—10 acres, 3 miles from shipping point; lies on the White Salmon River; all under fence; 6 acres in Spitzenbergs and Newtowns 2 and 4 years old; peach fillers; 3 acres in strawberries; fair house and barn. Price $3,750; easy terms.

184—10 acres, unimproved, 4 miles from White Salmon, 2 miles from postoffice; soil volcanic ash; all tillable. Price $100 per acre; half cash, balance in 3 years.

185—10 acres, ½ mile from White Salmon, unimproved; soil volcanic ash. Will make choice orchard land. Price $150 per acre.

187—30 acres, 5½ miles from railroad station; 26 acres slashed and burned; all under fence; red shot soil. Is in a very splendid location. A bargain at $100 per acre. Will give easy terms.

Thirteen Apples on Branch Eighteen Inches Long
White Salmon, Washington

188—40 acres, 7 miles from White Salmon; 18 acres brush land; soil red shot; topography level. This is a bargain at $85 per acre; easy terms.

189—40 acres, 5½ miles from White Salmon; 20 acres in apple trees of best commercial varieties, mostly Spitzenbergs and Newtowns 1 and 2 years old; 10 acres brush land; 10 acres second growth fir; soil red shot. Price $8,000; terms if desired.

190—40 acres, 8½ miles from White Salmon; 4 acres planted to Spitzenbergs and Newtowns, with a variety of small fruits for family use; 11 acres cleared and ready for trees; 4 acres in timothy and clover; remainder best orchard land; soil red shot; abundance of spring water; small house and barn on tract. Price $5,000; terms.

191—40 acres, 11 miles from White Salmon; soil red shot; near school and postoffice; four splendid springs on tract; new surveyed road will place it within 5½ miles from Columbia River and shipping point. Price $1,200; terms easy.

192—10 acres, unimproved, 1 mile from Husum; soil volcanic ash; all tillable; lies in a desirable location. Price $100 per acre.

193—10 acres, 9½ miles from White Salmon; 16 acres cleared and under fence; good 3-room house and serviceable barn; has gentle southwestern slope; soil red shot; beautiful location; delightful spot for a home. Price $75 per acre. Terms to suit.

194—80 acres, 1½ miles from town of White Salmon; 20 acres unimproved; an orchard of 600 trees, mostly Spitzenbergs and Newtowns 2 and 4 years old; a few other fruits for home use. Remainder of tract is fine orchard land and can be set to trees at a minimum expense; soil volcanic ash. Price $11,050. Terms to suit purchaser.

195—65 acres 1¼ miles from railroad; 13 acres planted to Spitzenberg and Yellow Newtown apple trees, ranging in age from 2 to 6 years; 18 acres more can be planted; terms to suit purchaser at 6 per cent; has good 4-room cabin. This overlooks the Columbia River.

196—40 acres, 13 miles from White Salmon; topography level; soil deep red shot. Splendid tract for an orchard and for an investment. Price $1,200; terms.

197—160 acres, 8½ miles from White Salmon; partly improved; 20 acres under cultivation; 30 acres brush land; easily cleared; good farm buildings; has about three million feet of merchantable fir timber; adjacent to saw mill; running water on tract; soil red shot. Is a good bargain at $8,000; terms easy.

198—160 acres, 11 miles from White Salmon; 60 acres slashed; 20 acres of brush land; balance fir timber; soil red shot; near saw mill; has good farm buildings. Price for a short time only, $8,000.

199—200 acres, 11 miles from shipping point; all under fence; has good farm buildings; 80 acres under cultivation; saw mill located on tract; 15 acres of apple trees; approximately a million feet of merchantable fir timber on tract; school house and post office near by.

200—20 acres, 1½ miles from town; good spring of water on place; small house; a few trees; 5 acres under cultivation; remainder easily cleared. Price $200 per acre.

202—40 acres; 15 acres orchard, 5 acres of timber, 20 acres cleared and ready for planting; good buildings; 8-room house, ready to move into. Price $6,000.

203—40 acres, 6 miles from Underwood, joining the White Salmon River; nice tract to divide into four tens. May be had for $4,000.

205—120 acres, 7 miles from town of White Salmon; raw land, covered with brush and fir; soil red shot. Entire tract may be had for $40 per acre.

WRITE FOR BOOKLET AND INFORMATION CONCERNING THIS WONDERFUL VALLEY

References: Those who have purchased through us

White Salmon Land Company White Salmon, Washington

A Partial LIST OF BARGAINS *for Sale by*

R. Field & Co., White Salmon, Washington

IN THE FAMOUS

White Salmon Valley

An ideal fruit belt, mild climate and wonderful scenery, pure water and fuel in abundance, a productive and inexhaustible soil, assuring large and unfailing crops, and a ready market with the best transportation facilities.

You will have to act quickly if you want any of them, because land in this famous White Salmon valley is rapidly increasing in value. We have sold many tracts of land in the last three years, and those who bought from us are well pleased. We can refer you to them. We also have bargains in city property and are daily listing other outside tracts, which we shall be glad to show you. We guarantee every tract as good as represented.

Reference: White Salmon Valley Bank.

No. 250—160 acres 4½ miles out; good fruit land; 2 acres cleared and in bearing orchard; some of the land is rough, some very fine; can be had at $75 per acre, or will tract up in smaller tracts, some for $75 per acre and some for $100 per acre. Good terms given.

No. 251—160 acres at Laurel, a fine place at $23 per acre; 5 acres cleared, 80 acres good timber, a spring and small stream on place, some fruit trees set out, 4-room house, good barn and other outbuildings; close to school and postoffice. A snap while it lasts.

No. 252—80 acres which can all be cultivated; good rich red shot soil; 9 acres cleared; watered by spring and creek which is being used on the land for irrigation; 3½ acres set out to fruit trees; has a house and small barn. With this place go team of horses, cow, calf, 32 chickens, wagon, buggies, harness and other implements needed. Price $6,000; $3,500 cash, rest time.

No. 253—40 acres unimproved and the very best of apple land in the apple belt can be had for a short time for $2,000, with terms to suit.

No. 254—160 acres at Trout Lake, a dairy farm; mostly all level land; has 18 acres cleared and is watered by spring and irrigation ditch; small house and barn. This place can be bought for $2,200; $1,500 cash, balance to suit.

No. 255—10 acres 4 miles out on the White Salmon river; a nice small home for some one and will do well for chickens and fruit. Price $1,850; half cash, rest to suit. This is early fruit land and will bear investigation.

No. 256—40 acres unimproved land 13 miles from White Salmon, good rich soil, will be sold at a bargain for $800 cash. Snap this up.

No. 257—80 acres close to Glenwood, unimproved but fine level land, easily cleared; is covered with yellow pine, but they are far apart. May come under irrigation ditch soon. Can be had for $2,400; half cash, balance on terms to suit.

No. 258—40 acres 8 miles out, nice level apple land, rich soil, at $50 per acre; terms given.

No. 259—10 acres in city limits, all in cultivation, 7½ acres in bearing fruit trees, cherries, peaches, apples and prunes. Lies mostly level. A very good bargain at $7,000; terms, $4,000 cash, balance to suit purchaser.

No. 260—Fine town lots 60x190, with cherries and peach trees in bearing on them. Price $300. Will make nice homes. Trees from now on will pay good interest on the money invested.

No. 261—80 acres 8 miles out in the apple belt, unimproved; covered with fir trees and willow and hazel brush; the very best of apple land. Price $3,500.

No. 262—40 acres 14 miles out, unimproved; has some good fir timber on. This is 3 miles from Snowden. Price $25 per acre; half cash.

No. 263—20 acres 3 miles from White Salmon; good rich red shot soil; land is all rolling, but not too steep for cultivation. There are 6 acres cleared and 275 fruit trees and 30,000 strawberry plants set out; has 4-room house and barn. Price $5,000; $3,000 cash.

No. 264—40 acres 6 miles out, in the center of the very best of apple land; 17 acres cleared, 11 set out to standard apples 1 year old; all the land can be easily put in. A bargain at $5,500; half cash, rest two years' time.

No. 265—55 acres close to Husum, in the White Salmon valley; practically all level land; small clearing; right on main road; land is easily cleared. A snap at $3,000; half cash, rest good terms.

No. 266—80 acres 6 miles out, about 40 acres cleared and most of it set out to standard fruit trees. This is a fine tract, lies well and has no waste land; will soon pay for itself when trees come in bearing. The price is $200 per acre; the best improved land on our list. Terms given.

No. 267—160 acres close to Husum; nice fruit land, rolling; mostly under fence, 7 acres in cultivation; has nice oak timber on it and is watered by spring which can be used for irrigation; nice small orchard in bearing; good 9-room house and good barn. A fine place for a summer resort. Price $100 an acre.

No. 268—60 acres close to town; nice level land, suitable to divide out in small tracts; will make nice homes. This is early strawberry land, cheap at $175 per acre, with good terms.

No. 269—80 acres 14 miles out; small clearing; mostly level land, rich soil; easily cleared, being willow and hazel brush land. Price $2,200; terms.

No. 270—30 acres 1 mile from town; 20 acres cleared, 17 acres set out to fruit; is watered by spring and stream. A fine tract of land and a money-maker. Price $10,000; terms given.

No. 271—20-acre tracts unimproved land 3 miles from town; good apple land, covered with fir timber, hazel and willow brush. Price $75 per acre; terms.

No. 272—80 acres 3 miles out; half level and the rest rolling; rich volcanic ash soil, with 4 acres in cultivation and 4 acres slashed; watered by a big spring. A snap for $4,800; half cash.

No. 273—We have large bodies of timber and fruit land combined, suitable for saw mill proposition or for investment, which will rapidly rise in value in a few years. A splendid tract to be put on the market in small tracts or for colonization.

No. 274—160 acres good fruit land, close to Gilmer; 20 acres partly cleared; spring of water on place; on good county road, daily mail; has about 4,000,000 feet good fir timber. Price $25 per acre; terms.

No. 275—6 acres adjoining city limits, all in cultivation; mostly set out in bearing fruit trees; will make a fine home. This place also has a nice view of Mount Hood and other places. Price $4,000; terms.

No. 276—40 acres in White Salmon valley, nicely located, 1½ miles from town; finest of apple and early strawberry land. Price $4,000; terms.

No. 277—10 acres ½ mile from town; 3 acres cleared and in commercial apples; good soil, with nice slope. Price $3,500.

No. 278—80 acres 9 miles out; about 10 acres cleared, with some fruit trees set out; very rich soil, in the apple belt; will make good orchard; has house and barn. Price $3,500.

We shall be glad to give you any further information you may desire. Being well acquainted with the possibilities and resources of the valley, we are positive we can be of service to you. We guarantee the best service to all of our customers and gladly make arrangements to show intending settlers the country, if they will let us know when they are coming. We respectfully solicit your patronage.

R. FIELD & CO., WHITE SALMON, WASHINGTON

We will plant and care for an

Apple Orchard

for you until it begins to bear—meantime you make small monthly payments

As the largest orchard operators in the Spokane country we invite you to become interested with us and in a way entirely within your means. I will gladly submit full data, price of tracts, terms, and other information of value upon request. Just request our booklet, "The Commercial Orchard," and say you want to know more. A postal will do.—A. G. Hanauer, Vice President.

Hanauer-Graves Company

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SPOKANE, WASHINGTON

Owners of

MEADOW LAKE FARMS

Ten miles southwest of Spokane on Cheney Electric Line. Five and ten-acre tracts, $150.00 to $200.00 an acre. Your own terms.

ROGUE RIVER VALLEY

Fomous for its APPLES, PEARS, PEACHES, GRAPES, MELONS AND CLIMATE

THE natural home of the Spitzenberg and Newtown apples. Rogue River pears have led the United States for past five years in the highest price in the New York market. No peaches of the South excel those of Rogue River, and trees are healthy. Grapes perfection in color and flavor and the best of shippers, and growers have more orders than they can fill. Rogue River canteloupes, watermelons and cassabas, none better and big money makers. The Rogue River Fruit Growers' Union gets the highest price for fruit, and the Southern Pacific gives terminal rates on shipments East. Climate the perfect medium between arid California and webfoot Oregon. No storms or winds to injure fruit crop. Almonds and figs ripen perfectly and palms grow in the yards. Land yet cheap, but will double in two years. American community and good schools, rural mails, telephones, etc. Full information by addressing CHARLES MESERVE, Medford, Oregon, Seller of *Reol Estate in All Parts of Rogue River Valley.* References by permission: Rogue River Fruit Growers' Union, First National Bank of Medford.

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AND

Royal Ann Cherries

We are the largest owners and planters of walnuts in Oregon. Our properties are in Yamhill County, the Walnut County. We sell planted five-acre tracts $100 cash and $15 per month, with four years' care.

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Been in Business Longer

And you are sure of a square deal

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IT'S FREE

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UNION COUNTY

The Banner County of Oregon

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The Peer of all Fruit Sections in the Northwest

Ten acre tracts, improved and unimproved. Also grain, hay, alfalfa and stock ranches. Write us for particulars

La Grande Investment Company **La Grande, Oregon**

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OREGON

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The Baker Valley is to Oregon what the Bitter Root is to Montana and the Grand Valley to Colorado. Land only two miles from the second best city in Oregon. Prices far below what you are accustomed to.

Descriptive literature.

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Upper Hood River Valley

Cheap and the best of land. Plenty of water for irrigation at low rates. Good transportation facilities. You are cordially invited to see what I have done at my home in six years. I handle these lands.

W. H. MARSHALL

Dee, Oregon In Hood River Valley

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20,000 acres of finest Peach, Pear, Apricot, Apple, Sweet Cherry and Grape lands in the Northwest. Twenty-seven years without a failure. Abundance of water. Unexcelled climate. Write for booklet to

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Emmett, Idaho

John Leland Henderson
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COUNTY SURVEYOR

HOOD RIVER, OREGON
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CLIMATE—A desirable medium between the drier eastern and the more moist western conditions of the Northwest.
SOIL—Volcanic ash, rich in phosphates, and recognized as the best in the world for apples and strawberries.

Makes a specialty of real estate, conveyancing, loans and surveying. The president, John Leland Henderson, is a practicing lawyer residing in Hood River, and has been identified with the Hood River Valley for thirty-three years.

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Rich soil. Delightful climate
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The prize-winning fruit district of the Northwest.

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WEISER FAT LAND
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Feltham-Klotz Land Company
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For description and prices on choice irrigated fruit lands, orchards, stock ranches and timber lands

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Apples, peaches, cherries and apricots are money-makers. Why not buy land where they grow to perfection? I have some bargains.

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The soil, water and climatic conditions essential to successful high class fruit production. Other resources. An exceptional field for investments. Call on or address

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Real Estate Agents WEISER, IDAHO

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We Always Have Some
CHOICE TRACTS TO OFFER

At popular prices, and sell them strictly on their merits. Years of study given to Hood River and its products. Can sell you intelligently. Call on or address

Geo. D. Culbertson & Co.
Leading Land Agents Hood River, Oregon

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GOOD FRUIT OR WHEAT LANDS, CHEAP

Opportunities for the orchardist and diversified farmer lie thick in Dufur Valley
Three streams fed by snow from Mount Hood flow through the valley

WRITE FOR DESCRIPTIVE BOOKLET TO

DUFUR VALLEY DEVELOPMENT LEAGUE DUFUR, OREGON

CALDWELL APPLE BELT

CANYON COUNTY, IDAHO

THE HOME OF THE PERFECT JONATHAN

We are the owners of the prize-winning apple orchard of the United States, having won seven individual prizes out of a possible eight at the National Horticultural Congress at Council Bluffs, Iowa, December, 1908, against nineteen competing states.

Orchards in this famous fruit belt this year required thinning. (See our thinning scene elsewhere in this issue.) This apple belt never lost a crop by frost.

We are land dealers and own our offerings. Fruit lands and suburban tracts our specialties. Liberal terms.

Address H. W. DORMAN, Manager Dorman Land Company, Caldwell, Idaho

WEISER WASHINGTON COUNTY IDAHO

The Monarch of Them All—The Land of Opportunities

Is situated on the bank of the famous Snake River, a beautiful stream 900 feet wide, and the boundary line between Idaho and Oregon. It is on the main line of the Union Pacific, running from Omaha to Portland, and the county seat of Washington County, which in natural resources is **one of the richest counties in the world.**

WEISER Has a population of about 4,500, is the headquarters for the Pacific & Idaho Northern Railway, traversing the entire county to the north. It is the home of the Idaho Industrial Institute, one of the best schools for boys or girls over 15 years on the Coast. It has a splendid hospital and a magnificent opera house, the latter costing over $65,000. The altitude of Weiser is 2,100 feet, and the soil is deep, rich and warm, and **positively cannot be excelled in productiveness.** The climate is almost Italian in its softness, with the industrial advantage of lack of excessive humidity. It is the soil of Sicily repeated, with Sicilian temperatures, but without the excessive Italian precipitation.

THE COUNTY Has about two and one-half billion feet of standing timber, and more than a quarter of a million sheep and cattle, and while thousands of people have become independent in the county, development has hardly commenced. The Crane Creek Irrigation Company will water 12,000 acres of new land next year, and 8,000 acres the year following. Across the river, adjoining the city, is the famous "Dead Ox" country, said to be the finest undeveloped country in all America. That this land will soon be watered there is not a reasonable doubt; the only question is whether it will be watered by the general government or by private capital, now awaiting the decision.

THE LEADING INDUSTRIES Of the country are live stock, fruit, general farming and mining. The greatest opportunities await the fruit grower, as the valley has been proven one of the best fruit regions in the entire West. For the investor, the home seeker, the fruit grower, the farmer, Weiser offers unparalleled opportunities, and the hand of welcome is extended by all her people to the stranger seeking a new and profitable field. Prices range from $25.00 per acre up. Write us fully your wants.

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WEISER, IDAHO

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Hood River, the Land of Opportunity

20 Acres 5½ miles out in the Crapper district; perfect soil, fine drainage; high and sightly; stream through place which affords good fishing and free irrigating water for five acres; new 7-room house, hard finished, costing $1,750. There are 262 twelve-year-old apple trees, mostly Spitzenbergs, 90 four-year-old Spitzenbergs, 207 two-year-old Newtowns and Spitzenbergs, and a family assortment of peaches, pears, cherries, apricots, etc.; trees are all in prime condition; 5 acres of strawberries, mostly spring planting; half mile to schoolhouse and store; R. F. D. and telephone; 4 inches of water. Price $13,500.

22.43 Acres 3½ miles southwest of Hood River, on one of the best traveled roads in the valley. All under cultivation; all level; just sufficient slope for good drainage; 516 apple trees in full bearing, 12 years old, mostly Spitzenbergs and Newtowns; 700 Newtons one year old; 200 peach trees; balance of place seeded to wheat, oats and vetch; 6 inches of water stock. Place is in perfect state of cultivation and exceptionally fertile. Good house and barn; one horse, cow, surrey and all tools and implements go with place. Price $19,000; $6,000 cash.

20 Acres Highly improved, 6½ miles out on the East Side. Lies perfect, good drainage, gentle slope to east; fine rustic bungalow costing $4,500, modern in every respect; attractive lawn and flowers; good barn, chicken house, Jap house, etc. Entire place is set to strictly commercial orchard and in a scientific way, there being 10 acres in 3-year-old Newtowns and Spitzenbergs, and 10 acres in 2-year-old Newtowns and Spitzenbergs, pollenized with Ortleys. Entire place is set to strawberries between the apple rows, of which 5 acres are 1 year old, balance set this summer. The property has been developed in a scientific way, and absolutely on right lines. The orchard is perfect, and at the price of $17,000 is fully $5,000 below the market.

43½ Acres Unimproved, 9 miles south of Hood River, 2½ miles south of Odell. All under the ditch and every foot can be cultivated. Is brush land, light clearing. A loose, easily worked, red shot soil. Genuine bargain at $5,000; $1,000 cash.

120 Acres Unimproved, 4 miles from Hood River, on East Side. Good clay loam soil; 80 acres lies nicely for orchard. A good buy at $5,500; $2,000 cash.

20 Acres Unimproved; located in center of West Side, 5 miles out on county road. Nice location, fine soil, good drainage; 15 acres in 2-year-old orchard in good condition, there being 375 Newtowns, 600 Spitzenbergs and 210 Arkansas Blacks; Jonathans and Wagners for pollenizers; balance of place in meadow and pasture; 5 inches of water stock goes with place. Price $11,000; $3,000 cash.

WE HAVE MANY MORE, LARGE AND SMALL, IMPROVED AND UNIMPROVED. IT WILL PAY YOU TO SEE US BEFORE YOU INVEST

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BETTER FRUIT

A MONTHLY ILLUSTRATED MAGAZINE PUBLISHED IN THE INTEREST OF MODERN AND PROGRESSIVE FRUIT GROWING AND MARKETING

MEASUREMENT OF WATER BY MEANS OF A METER

BY PROFESSOR E. B. HOUSE, FORT COLLINS, COLORADO

IN two previous articles I discussed the measurement of water by means of the orifice and weir. Let us now take up the meter and show the method of measuring water by means of this instrument.

The meter is a simple instrument and the principle upon which it is based is simplicity itself. I have seen people look at a meter and marvel over it as though Satan, himself, were wrapped up in it, but there is nothing mysterious or weird about it. The meter is an instrument for measuring the velocity of flow of water in a stream and then, when the cross-section of the channel is determined by measurement and the velocity of flow is found by meter, a simple multiplication of velocity in feet per second by the cross-section in square feet will give the quantity flowing in cubic feet per second, or in second feet. A glance at the cut will give a general idea of the construction of all meters of this kind. The cut shows two meters, the Price Acoustic Meter on the left and a Lallie Electric Meter on the right. Both are good meters. The Price meter is more compact and does very well for shallow water where it is possible to get in the stream, or close to the surface. The electric meter, on the other hand, can be handled by the wire cable and lowered into the stream to any desired depth by means of it. It can be handled from a bridge or a car swung from a cable stretched across the stream. For general use it is to be preferred. Another meter, which is a favorite meter with us, is the direct reading meter, and in this instrument the revolutions of the wheel are read from graduated wheels in a case above the large wheel. These can be thrown in or out of gear by a mechanical contrivance, and reading the indicator before and after, gives the number of revolutions and parts of a revolution the wheel has made while in the water.

It will be noticed from the cut that each meter shown has a wheel upon which are placed metallic cone-shaped cups, and when placed in position in the stream the force of the current causes this wheel to revolve. The swifter the current the faster will the wheel turn. In the Price meter the rods are screwed in place and the rubber tube carries the ear trumpet to the ear. Near the wheel is a mechanism which causes a small hammer to strike a metallic disk on every tenth revolution, and these clicks are easily heard when the meter is under water, so that by counting a certain number of clicks and noting the time with a stop watch, we have the two factors necessary to determine the rate at which the "cup wheel" is revolving, or the number of revolutions it makes per second.

In the electric meter, contact is made with every revolution of the "cup wheel," and the electric current from the battery produces a click in the sounder which is placed over the ear. This sounder is similar to a telephone receiver and the click sounded is much the same as that heard in telephones when not working properly. By counting these clicks for a certain length of time, or noting the exact time for a certain number of clicks, gives the data from which the revolutions of the "cup wheel" per second may be computed.

To get the number of revolutions per second of the "cup wheel," or, in other words, the rate at which it is turning, and get it accurately, is one of the important things to be learned by one who would measure water accurately with a meter, for upon this is based the computation which gives the velocity of the stream.

The principle upon which the calculation is based may be stated thus:

The same effect is produced upon the "cup wheel" by moving the meter through still water at a certain velocity as is produced upon the "cup wheel" when the meter is held stationary in running water, which is moving at the same speed. Each meter, therefore, must be "rated," and this rating of the meter consists of determining what effect different velocities have upon the "cup wheel." The accompanying cut shows the rating station at College Lake, three miles west of the college. The meter is fastened to the car, which is then pushed along the track at a uniform rate for a given distance, say one hundred feet, and the time noted. The

Contents

MEASUREMENT OF WATER BY MEANS OF A METER, 17
RECLAMATION PROJECTS OF THE GOVERNMENT, 20
THE RECLAMATION OF THE AMERICAN DESERT, 22
IRRRIGATION WORK IN OREGON AND WASHINGTON, 30
OREGON'S LAW CONTROLLING WATER RESOURCES, 34
IRRIGATION SITUATION IN STATE OF WASHINGTON, 36
THE DUTY OF WATER—ITS ECONOMICAL HANDLING, 39
THE HORTICULTURAL POSSIBILITIES OF IDAHO, 41
PUMPING OF WATER FOR IRRIGATING PURPOSES, 47
"THE CALL OF THE WEST" BY GOVERNOR JOHNSON, 50
THE PRUNE GROWING INDUSTRY IN IDAHO, 55

Clinton, Michigan, September 25, 1909.

Better Fruit Publishing Company, Hood River, Oregon.

Gentlemen: Here is to "Better Fruit." Let the watchword movement continue; let every subscriber be a committee of one to get at once at least one new subscriber, and push to the front the best fruit paper in the world. It's great. Let the good work go on. Yours,

D. Woodward & Son.

The above letter is a splendid suggestion. We are acting on it immediately. We are going to ask each subscriber to send us one new subscriber. It is a small request, and we believe that every subscriber appreciates "Better Fruit" and likes it well enough to grant this small favor. If you do you will confer a great favor on us and we will endeavor to reciprocate by making "Better Fruit" during the coming year larger and better in every way than it has been in the past. "Better Fruit" is doing a splendid work in assisting every fruit grower in the Northwest. We beg to call your attention to the fact that it is doing more to induce Eastern people to come to the Northwest to engage in fruit growing than any single publication in the Northwest territory. "Better Fruit" is helping every fruit grower in two ways. It is teaching better methods, and by bringing people to the Northwest it increases the value of every man's property. For these two reasons it is worthy of the loyal support of every fruit grower in the Northwest territory, and we hope you will grant the small favor we have asked. Won't you please do it, and do it now?

revolutions of the "cup wheel" are also taken and this gives the data necessary.

For example, suppose the number of clicks counted are forty, the watch shows fifty seconds and the distance traveled was 125 feet. 125÷50=2.5 feet per second velocity of the car and meter, and 40÷50=0.8 number of revolutions per second of the "cup wheel."

It can now be argued that if a velocity of 2.5 feet second through still water produces 0.8 revolutions per second of the "cup wheel," therefore, if we hold the meter still in running water and the "cup wheel" turns at the rate of 0.8 revolutions per second the water at this point is flowing at the rate of 2.5 feet per second.

Rating the meter, therefore, consists of running the car at different speeds and noting the velocity and revolutions per second, and when a number of trials have been made the results are platted upon cross-section paper and a line drawn through the points. The equation of this line is then determined and the result for the electric meter in the cut was ($V=2.67\frac{R}{T}+.08$), where V equals velocity in feet per second, R equals total number of revolutions of the "cup wheel" and T equals time in seconds. This equation will be different for each instrument.

With a rated meter then it is only necessary to place it in running water, find time by means of a stop watch, count the number of revolutions, substitute these values in the equation, solve the equation and we have the

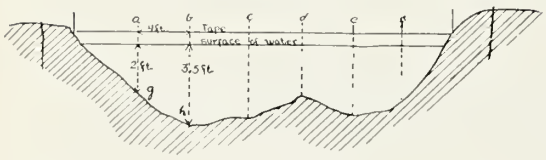
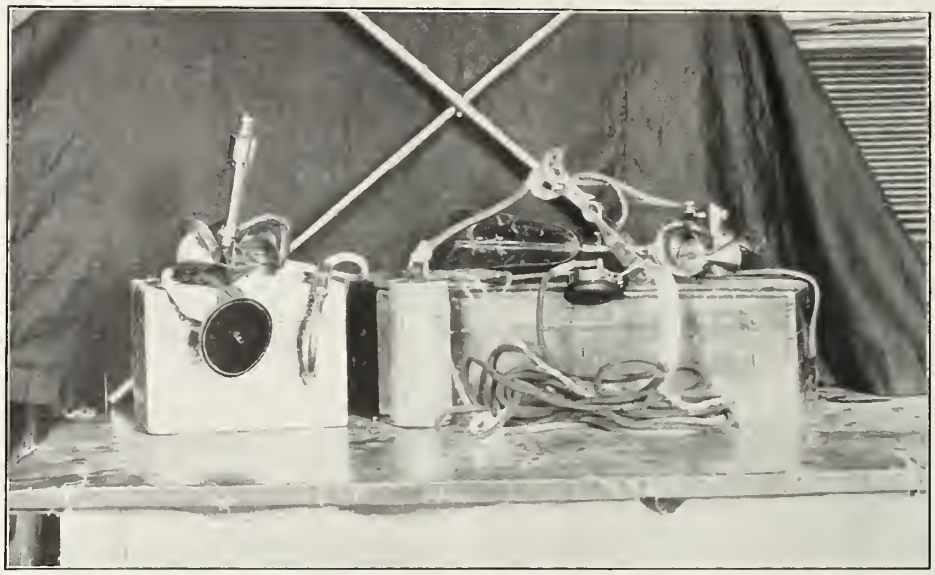


FIGURE 1

velocity of the water at that point in the stream in feet per second.

Rating meters in lakes is never quite satisfactory for there is always more or less current, due to wind, etc. In the basement of the new irrigation engineering building now under construction at



INSTRUMENTS USED IN DETERMINING VELOCITY OF WATER, BY PROFESSOR E. B. HOUSE, IRRIGATION EXPERT, FORT COLLINS, COLORADO

the college, we have provided for a tank six by five by one hundred and twenty-five feet, and this will be equipped with car and track and timing apparatus, which will make an ideal place for rating meters.

Let us take up now the rating of a stream and let Figure 1 represent the cross-section:

A tape is first stretched across the stream, or some other means supplied, which will give the distance a to b, b to c, c to d, etc. At a, b, c, d, etc., the depth is taken and then the area of each section is found by considering them either triangular or trapezoids, as the case may be. Take the section abgh for example: 2 ft.+3.5=5.5 ft. ÷2=2.75 ft.=average depth. 2.75 ft. ×4 ft.=11.00 sq. ft.=area of abdh. The meter is now put in midway between a and b. Starting at the top, it is slowly lowered to the bottom and then raised again that we may get the average velocity of this section. The movement up and down may be repeated several times, care being taken to have it uniform. The time is taken, the clicks counted and then, from the equation of the meter, the velocity determined. For example, suppose the clicks counted are eighty, the time fifty seconds; then from above $V=2.67\frac{80}{50}+.08=4.35$ feet per second. The quantity flowing through the section is then 11.00 square feet x 4.35 ft.=47.85 cubic feet per second. Going now to the next section the same thing is repeated and

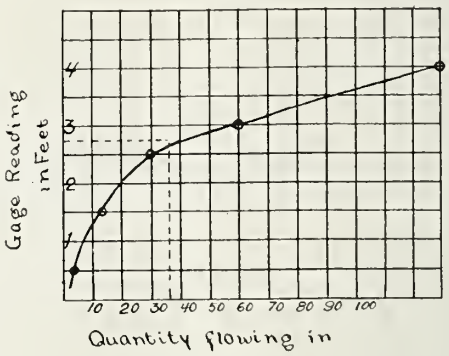
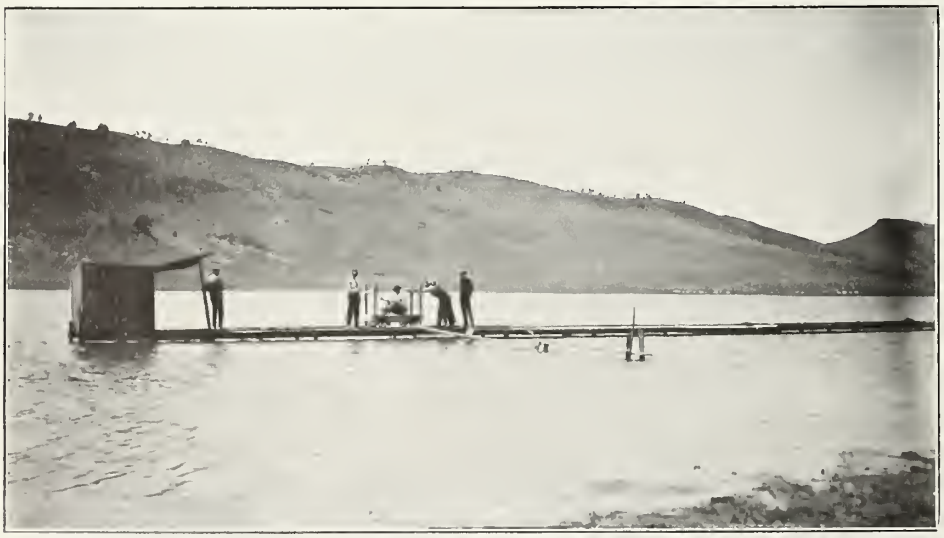


FIGURE 2

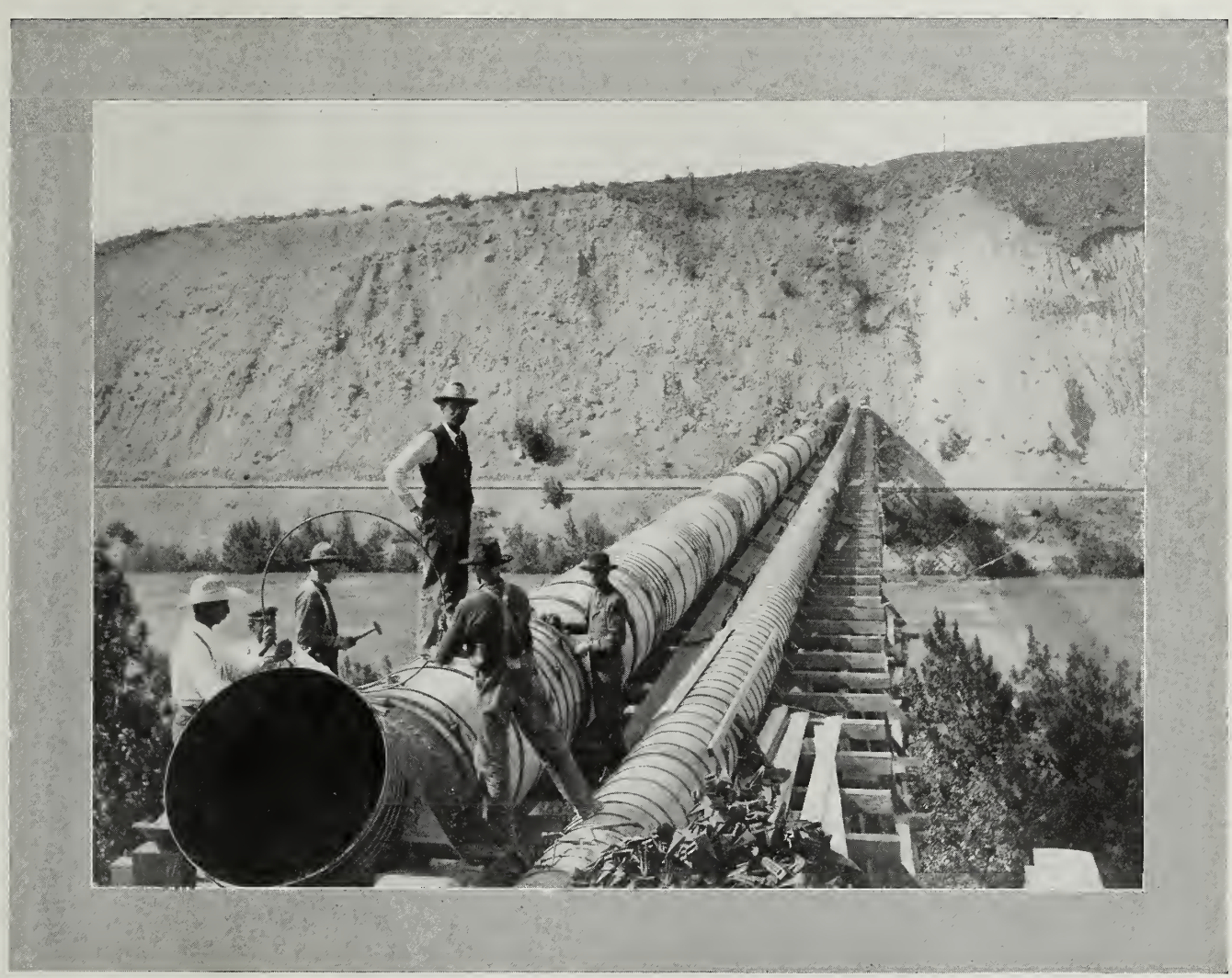
all the others are taken in order. The sum of them all gives the total flow of the stream.

In rating a ditch at a rating flume the work is simpler, because the sides of the flume are vertical and the bottom is flat. Suppose we had a flume of this kind to rate, and the ditch is running full. Going to the flume we would note the gauge rod reading (a graduated rod usually fastened to the side of the flume), then carefully measure the width of the flume and the depth at intervals across it. The meter is now put in and the velocity of each section obtained. The quantity flowing is thus calculated. The water in the ditch is then cut, the depth in the flume decreases and the measurement is repeated, giving a new quantity for the decreased depth. This is repeated five or six times and the results put upon cross-section paper (Figure 2), and the discharge curve drawn as shown in Figure 2.

The points represent the results of the measurement during the rating. From



A CAR ON RAILS WITH A SUBMERGED WHEEL IN STILL WATER, BEING USED TO DETERMINE THE VELOCITY OF WATER BY E. B. HOUSE, FORT COLLINS, COLORADO



Photograph by B. C. Collier

METHOD OF CONSTRUCTING THE SIPHON ON THE HIGH LINE CANAL, WENATCHEE, WASHINGTON

A wrought iron pipe surrounded by wooden staves and the whole thing bound together with stout iron hoops, so arranged that they may be tightened during the heat of summer and loosened during the fall rains, makes a conduit strong enough to resist the enormous pressure exerted on its sides by the total flood of the high line canal

this plat now the quantity flowing at any gauge height can be read off as follows: Suppose GH = 2.7 feet, run out to the curve horizontally, then drop vertically down as per dotted line, and read off the quantity (in this case 38 seconds feet). In this way the "rating table" is worked out. This gives the quantity flowing for each tenth of a foot in depth on the gauge rod, and this usually is close enough for all practical purposes.

SAGE BRUSH LAND BEFORE IRRIGATION AND CULTIVATION, KENNEWICK, WASHINGTON

RECLAMATION PROJECTS OF THE GOVERNMENT

PART OF ADDRESS DELIVERED BY PRESIDENT TAFT AT SPOKANE, WASHINGTON

THE plan of the government to reclaim the arid and semi-arid lands, manifested in the reclamation act, has been carried out most rapidly by the bureau charged with its execution.

I had the honor the other day in Colorado of opening the most ambitious of these projects, at least the most difficult of them—the Gunnison Tunnel—which is to bring water into a valley in Colorado known as the Uncompaghre Valley, with 150,000 acres, and to put it in a condition to grow fruit and cereals.

There are thirty projects which have been entered upon by the reclamation bureau, and I believe all of them are to be commended for their excellent adaption for the purpose for which they were erected and for the speed with which the work has been done.

It is said, however, that in the planning of a number of these improvements the enthusiasm of the projectors has carried them to a point where they begin to feel embarrassed in the matter of resources with which to complete the projects, and begin to show that prudence was not closely observed by those engaged in executing the act; that the projects were too many, and more than could be completed in a reasonable time after their beginning, because of a lack of funds.

The reclamation act provides for the expenditure of funds made up of the proceeds of the sale of public lands, and reimbursed from time to time by the instalments to be paid by the sellers who take up the irrigated land, and it also provides that no part of a project is to be contracted for or begun until the money for the completion of that part of the project contracted for shall be in the reclamation fund.

Now it appears that it will take $10,000,000 or more, which is not available in the reclamation fund at present, fully to complete the projects, and it also appears that a great number of persons, by reason of the beginning of the projects, have been led into the making of settlements, the expenditure of time and labor, with the hope and upon the reliance that such reclamation enterprises would be carried through in reasonable time.

I think that there is no doubt that it was the intention of Congress that projects should not be multiplied in such a way that they could not be completed within a reasonable time, out of the reclamation funds provided by the sale of public lands, and it would probably have been wiser to adhere strictly to the limitations thus construed, even though the language of the act, by dividing up the projects into parts in terms, seemed to permit the beginning of more projects than there was likely to be money enough to complete within a reasonable time.

The pressure was doubtless very great, and the reclamation service yielded to the pressure within the letter of the law, and now find themselves in the situation described.

The work has been well done and reflects great credit on the engineers who have had charge of it.

SECTION OF THE CANAL COMPANY'S HIGH LINE, AS IT APPEARS COMPLETED AT WENATCHEE, WASHINGTON

The view shows the three necessities of construction on one of the most wonderful irrigation canals in the world. In the foreground there is the simple ditch, then there is a bridge crossing a mountain creek, and in the distance is the flume, a wooden trough, strong and heavily braced, skirting the mountain foothills, and large enough the carry the river's water

INTAKE OF GOVERNMENT SUNNYSIDE CANAL PROJECT, YAKIMA VALLEY, WASHINGTON
Mr. Garfield, Secretary of the Interior, and party

But something must be done to relieve the present situation, which is one of disappointed hopes to many settlers upon the arid lands, who, counting upon an early completion of the projects undertaken, have invested their money and spent their time, and seemed to be no nearer the goal of satisfactory irrigation than they were when the projects were begun.

I think it wise to apply to Congress for relief, by urging the passage of an enabling act which shall permit the Secretary of the Interior to issue bonds in the sum of $10,000,000 or more, to complete all the projects now projected.

These bonds should be redeemed from the money paid into the reclamation funds, after the completion of the projects.

From conversation with the senators who have visited much of the reclamation work and given an examination of its progress, I infer that such a proposal as this seems to them to be the best way out of the present difficulty, and I shall take pleasure in recommending the passage of such a remedial measure by the next Congress.

No one can visit this Western country without being overwhelmingly convinced of the urgent necessity for the proper treatment of arid and semi-arid lands by the extension of systems of irrigation.

The results in the productivity of the soil when irrigated are marvelous. The mere fact that the reclamation service has gone ahead too fast ought not to prevent Congress from lending its aid to overcome the difficulty.

We shall know better in the future treatment of the subject, and in the further use of the $50,000,000 fund, how to avoid putting ourselves in a similar position again. Meantime, irrigation works under private auspices are being projected in every direction, and the prospect of reclaiming millions of acres from the deserts is most encouraging.

The examples of government engineering and of ingenuity in planning the structures in the various government projects for irrigation are of the greatest utility as models for private enterprise.

One subject that is now being agitated in some quarters calls for notice. Payment for irrigated lands is required to be made in ten annual installments.

Suggestions are now being made that these should be lengthened into a longer term. I sincerely hope that Congress will not listen to such appeals.

It may be well to make the first three or four instalments nominal, but after that time the instalments should be large enough to pay the total amount due, upon which no interest is calculated, in ten years.

Any other course will encourage a lack of thrift and industry, and will greatly embarrass the extension and continuance of the work of irrigation.

OUTLET OF DAM, UNITED STATES GOVERNMENT UMATILLA PROJECT, UMATILLA COUNTY, OREGON

THE RECLAMATION OF THE AMERICAN DESERT

ADDRESS OF JOSEPH M. CAREY, FATHER OF THE CAREY ACT, AT THE IRRIGATION CONGRESS AT SPOKANE, AUGUST, 1909

THE Great American Desert, as defined sixty years ago, was then in the estimation of the people of the United States of little value, save it might serve as a place for the last stand of the uncivilized tribes of Indians and the wild animals found on the continent. Even after the United States had acquired the vast territory by purchase, by conquest or by right of discovery, there were among the most intelligent statesmen and scientists of the country, those who did not think that the territory could ever become an important factor in the progress, wealth and politics of the United States. The mines of gold, silver and copper were then only becoming known. The great fields of coal had not been uncovered. The geology of the country was a sealed book. The possibility of agriculture was not even considered.

CONSTRUCTION OF SPILLWAY DAM, UNITED STATES GOVERNMENT UMATILLA PROJECT, UMATILLA COUNTY, OREGON

The Great American Desert has disappeared from the maps today. No portion of it is longer dominated by Indians. Every part of it is marked by mining explorations and agricultural development. It has all been parcelled out to great states and territories, and every part of it has civil government, and only a small portion of it is included in Indian reservations.

Under the domination of great states and territories, the arid country is responding rapidly to the brawn, brain and aggressiveness of civilized man. Its natural resources are being utilized, and the fertility of its soil is being demonstrated, as a marvel to the world.

The great arid and semi-arid belt includes the western halves of North and South Dakota, Nebraska, Kansas and Texas, all of Montana, Wyoming, Colorado, New Mexico, Idaho, Arizona, Utah and Nevada, the most of California, and much of the eastern portions of Washington and Oregon, aggregating perhaps 1,263,695 square miles, or equal in square miles of acreage to thirty states the size of Ohio. Enumerated as follows:

Arizona, 113,020; California, 75,000; Colorado, 103,925; Idaho, 84,800; Kansas, 40,000; Montana, 146,080; Nevada, 110,700; Nebraska, 35,000; New Mexico, 122,580; North Dakota, 30,000; Oregon, 35,000; Oklahoma, 20,000; South Dakota, 35,000; Texas, 100,000; Utah, 84,970; Washington, 30,000; Wyoming, 97,890. A total of 1,263,965.

These states and territories in acreage equal two-fifths of the United States.

When we consider that the three staple crops, oats, corn and wheat,

GOVERNMENT DAM ACROSS THE YAKIMA RIVER AT INTAKE OF SUNNYSIDE CANAL, LOWER YAKIMA VALLEY, WASHINGTON

IRRIGATING A GARDEN TRACT AND YOUNG ORCHARD, WENATCHEE, WASHINGTON

raised during the present year, are produced on an acreage only one-seventh as large as the acreage of the arid region, we can in a small measure, determine what will be produced in this great arid belt, when all the available water is utilized in the growth of crops.

A well irrigated acre, as a rule, will produce two or three times as much as an acre where irrigation is not practiced, and this, too, where the conditions of the climate and the fertility of the soil in an unirrigated section, are most favorable. We assume that in each one of the subdivisions, there will be from two to ten million acres reclaimed. I believe the acreage will be larger, even than the greater figures in such states as Wyoming, Montana and Idaho, where much water is accessible.

The cultivation of the soil, with the aid of artificial irrigation, so far as we know, was coincident with the earliest civilization of man, yet the people of the United States knew little or nothing of it until Brigham Young and his band of sturdy followers undertook to wrest from the desert of Salt Lake Valley food for themselves and their domestic animals by the application of water to a soil parched by the hot sun of many centuries. What has been done since in the states and territories west of the Missouri River through irrigation, reads like a romance.

These states and territories mentioned extend from Canada to Mexico, affording every variety of climate necessary for the cultivation and growth of the great agricultural staples in the markets of the world, and for the best known fruits common in temperate and semi-tropical countries.

Who thought at the times of the admission of California and Colorado that these states in so short a time would become so great as grain and fruit states? The rich mines found within the borders of each made their admission possible. The agricultural resources of California have overshadowed the mines, while sugar beets and fruit culture in the State of Colorado will soon send the great mines of that state far to the rear. The other states

HEAD OF LARGE DROP, UNITED STATES GOVERNMENT UMATILLA PROJECT, HERMISTON, OREGON

DIVERSION WEIR OF OKANOGAN NATIONAL IRRIGATION PROJECT, THREE MILES UP SALMON CREEK FROM THE TOWN OF OKANOGAN, WASHINGTON

of the arid belt are rapidly pressing forward to the goal of becoming great agricultural and fruit states. Irrigation is metamorphosing the arid country.

It was the discovery of the gold and silver that made many of the states included in the arid belt. How insignificant each would have remained, had it not been for their agricultural development, made possible by irrigation.

The basis of a good state is agriculture and horticulture. California's wealth today is in her agriculture. Nevada's bonanza mines in a few years produced $600,000,000. These mines were exhausted. The silver was carried beyond the borders of the state. This ruined Nevada for a half of a century. Could the agricultural development of this state have been begun in the sixties, Nevada would today be a populous state.

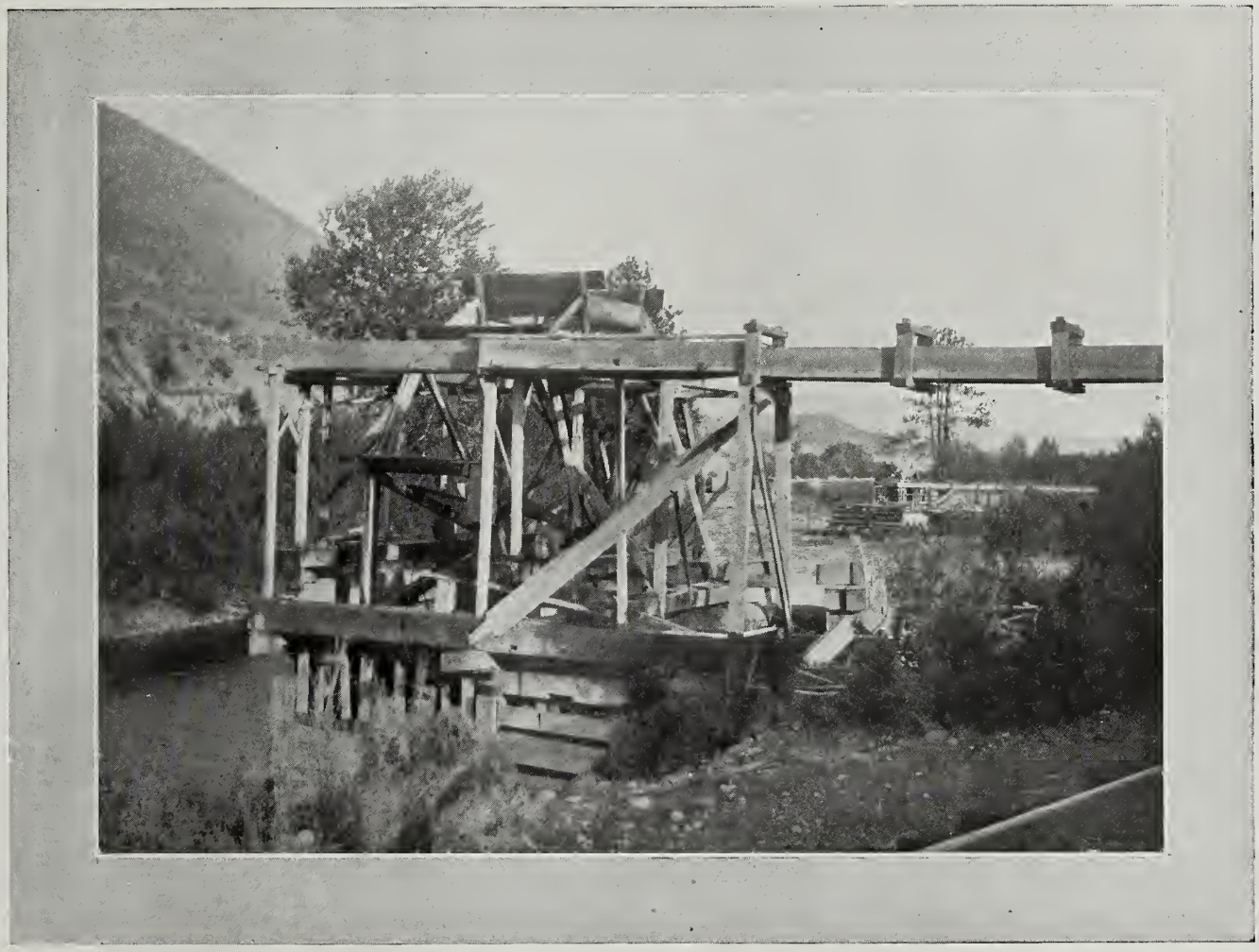
An awakening has come through the reclamation act of the general government, as the state is starting on a career of agricultural development.

The people of Wyoming, my own state, for thirty years after her organization as a territory, thought the wealth of the state would consist almost entirely in the growing of cattle, sheep and horses.

The cultivation of the soil has become popular. Great irrigation enterprises have been undertaken. Millions of dollars have been expended. Those in course of construction will cost many millions more. The work has just begun. Through these enterprises, thousands of farmers are finding homes and productive farms.

There has been nothing yet discovered and there never will be, to supply the

THE CORBIN CANAL, SPOKANE VALLEY, WASHINGTON



THE OLD WATER WHEEL USED BY PIONEERS OF IRRIGATION FOR RAISING WATER FROM WENATCHEE RIVER BEFORE CONSTRUCTION OF HIGH LINE CANAL

place of the moisture required to start the seed of plant life and to mature the plant after the seed has germinated. Water is as necessary to plant life as it is to animal life. It is true that some varieties of plants require more moisture than others. By the artificial application of water, just the right measure may be applied and at the proper time to obviate the disadvantages of drouth or flood. In this wise, good crops may always be the rule and rarely the exception. That which is called dry farming in the arid regions is either a delusion or it means that heretofore undiscovered moisture is now found secreted or accumulated in the soil, which may be so applied by cultivation as to feed plant life and growth. The moisture must be procured from some source.

Good and proper cultivation of the soil is a great factor for good crops, whether they be grown under favorable conditions in the rain belt, or under the irrigation canal. Good cultivation may discover to the farmer that the shortage of water was only apparent, and not real. It may lessen the damage of superabundance of moisture, but we do believe that there is an inexorable law, which, under all circumstances and conditions, requires a sufficiency of moisture for agricultural and forest culture; otherwise it will be a partial, if not a total, failure.

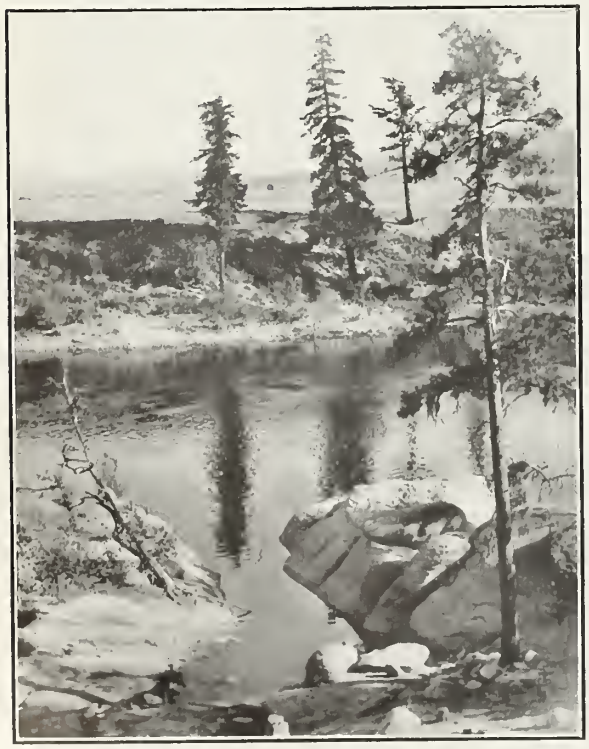
The moisture must be supplied from some source. The difficulties may be lessened by the introduction of new seed and by the adaptation of new plant life to a given section.

The great work being done by the

PARK LAKE, THE STORAGE RESERVOIR FOR THE IRRIGATION OF SUNNYSLOPE
When completed this reservoir, near Baker City, Oregon, will cover an area of 240 acres, and will hold sufficient water for the late irrigation of 10,000 acres. Water is now available from it

GOOSE CREEK, CAREY ACT LANDS. SITE OF DAM, GOOSE CREEK PROJECT
This project will irrigate 40,000 acres at Burley, Idaho

agricultural department of the country and by the State Experimental Stations, stand highly to their credit. Perhaps in no other department of the government, is money more wisely expended and for which greater returns are received by the mass of the people. The new exotic grains, the grasses, and new vegetables being introduced into the country are adding largely to the wealth of the farmer and to the value of the lands which he cultivates. I am not a convert to a theory that nature, at this late day, will intervene and permit mankind to exist without water, or that plant life will grow with less moisture than has been required for untold centuries of the past. The laws of nature are not changed by our desires any more than they are changed by miracles. We may learn new applications of the laws of nature; we may control the currents of air and the flow of the streams, but we do not expect the time to come when animal and plant life will exist in the best possible manner without sufficient pure air and water.



SPOKANE VALLEY SCENERY NEAR IRRIGATED TRACTS AT PASADENA, WASHINGTON

Because of an absence of water and snow we may find a desert; a desert that produces nothing of value in the economics of man. We may leave this desert and arrive where there is a limited rainfall and where partial crops or small crops may be produced, or where some seasons full crops may be grown; and we may proceed further and reach a country where the precipitation of moisture from year to year, other things being favorable, is apparently just right for animal and plant life. Where irrigation is practicable, the first two conditions may be favorably met, as we can supply the larger or smaller quantities of water required to bring perfection, as near as may be, in the growth of agricultural crops.

Fortunate indeed is the man who owns and cultivates an irrigated farm. With water from the source of supply, he can, at all times, anticipate the drouth, or hold back the water and prevent the disadvantages of the floods, and be so prepared to utilize the water as to obtain the best possible results.

Favorable are conditions in an irrigated country, that by sowing of proper crops and the rotation of crops, the soil may be kept fertile, and in the cultivation of crops one year the soil may be prepared and put in such conditions as may be necessary to obtain a rich harvest the succeeding year.

In the great areas where irrigation is practicable there need be no waste of soil. The organic matter so necessary in plant life may be retained or restored to the soil, and through the alfalfa and other clovers, peas, etc., the nitrogen may be secured. The soil need not be exhausted, and need not be washed to the seas. Just the reverse of the case now found in great sections of our country, where the rich soil originally found has been exhausted by continual cultivation or driven to the sea by torrential storms.

With the more certainty we hold the water back that accumulates in the streams and lakes, the more certainly will we control its application to the soil of the plains, valleys and mountain

IMMENSE SIPHON IRRIGATING SYSTEM, COWYCHEE GAP, YAKIMA VALLEY, WASHINGTON

sides in the arid country. By this means we can control the floods, which destroy the valleys of the Mississippi, the streams of the Pacific and other tributaries. In a material way, the states of the Mississippi Valley and those of the Pacific Slope, will be as greatly benefited by the construction of the great irrigation system as the states directly benefited. In this wise, if in no other, the reclamation of the arid lands becomes a question of national importance. Therefore, it is not strange that it has become a subject of deep concern and is kept in the public view by the press of the country. The world is alive to its importance. Capital is seeking investment in irrigation enterprises and the promoter is busy in advertising and giving these enterprises notoriety.

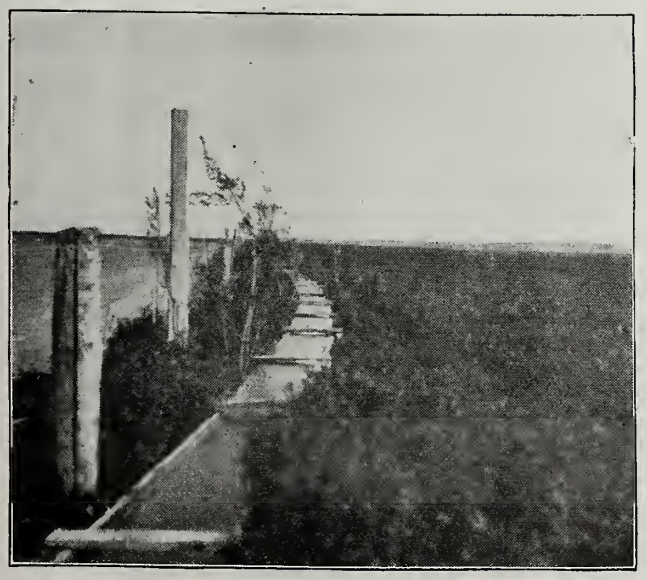
Today there is scarcely a state or territory, wholly or partly included in the American Desert, but what has great irrigation projects completed and in operation, with still greater ones in course of construction. The flow of every stream is being measured; the unappropriated waters are being sought. In no other branch of industry is capital more energetic in seeking opportunities for investment, than in irrigation enterprises.

The most formidable of these great projects have been undertaken by the reclamation service of the General Government, but others scarcely less formidable are being constructed with private capital for the benefit of private lands, while a very large acreage under what is known as the "Carey Act" is being segregated and being reclaimed for immediate settlement, on easy payment plans for perpetual water.

IRRIGATION DITCH NEAR BUHL, IDAHO

The progress made with irrigation is already great, yet the growth has just begun. Even now the science of irrigation is but little known. That mistakes are made by engineers in their estimates are many, is not strange. How incompetent would be the engineer who built the first railroad, without further education, to construct a railroad of today, such as required by a Hill or a Harriman. With us irrigation is in its infancy. The science must be learned. It will be a progressive one. In fifty years from today the duty of water, the least quantity of water without waste required for a given acreage of land under certain conditions, the quantity of water available in the streams, and unseen under the soil, will be better understood, and even then the science will be in its infancy; and where we can see but one million of acres available for irrigation, there probably then will be found five millions of acres for the serious consideration of the engineer. As the years go by lands will be redeemed which are not now considered in even the remotest way in the category of availability.

Perhaps nothing has directed more interest to the irrigated farm than the fact that good lands, free for the taking in the rain belt, are no longer available to the landseeker. If the government has a portion of a reservation to throw open to settlement, so great is the demand for each subdivision of it that



FLUME AND ALFALFA ON THE RANCH OF PASCO ORCHARD COMPANY, PASCO, WASHINGTON

Courtesy of Beecher & Thompson

GRAVITY IRRIGATION, WEST FARMS, SPOKANE VALLEY, WASHINGTON

FOUR-YEAR-OLD JONATHAN APPLE ORCHARD, WITH DEWBERRIES BETWEEN THE ROWS, AT GREENACRES, IN THE SPOKANE VALLEY, WASHINGTON

the Interior Department has found it necessary to run a lottery to determine the preference of location, a plan which we are afraid does not secure the best class of settlers for a new country.

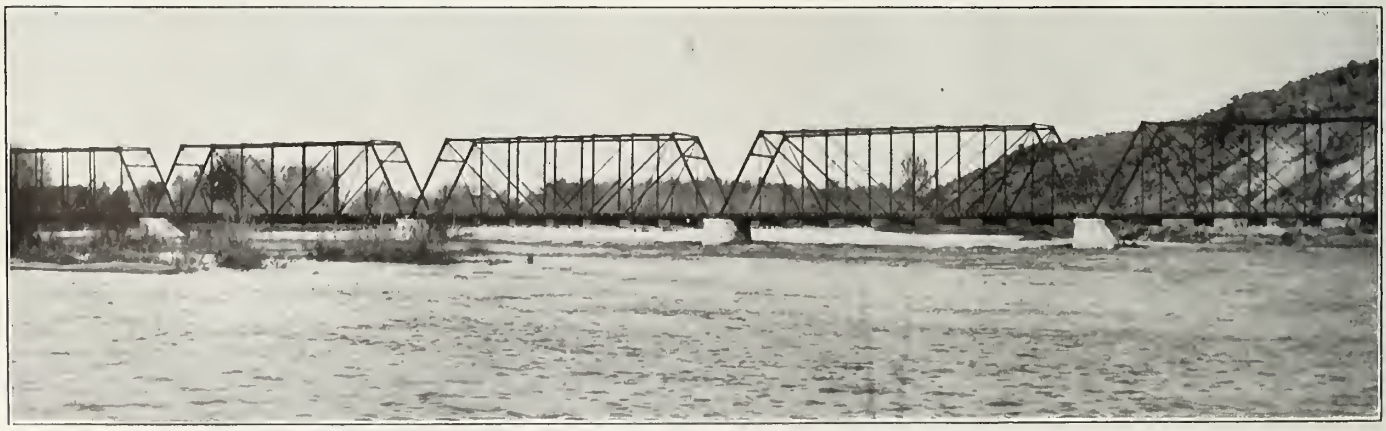
The people must have homes; a living they are entitled to, and nowhere else is there a greater opportunity to make homes available than by the redemption of the lands in the arid belt. The world is awakening to this necessity, as well as to the importance of the subject. This is evidenced by the millions of dollars being invested by the individual and corporation, and by the government of the United States in its reclamation service.

Perhaps no field offers greater and more profitable opportunities for investment of capital.

Irrigation investigations and engineering are new questions, but we are becoming familiar with dams, hundreds of feet high, with storage basins which carry billions of feet of water or so many hundreds of thousands of acre-feet of water, and to ditches and canals that carry measured quantities of water. All of these subjects beget inquiry and investigation.

No field opens to the young scientist or engineer with brighter prospects than irrigation. A comprehensive and constructive mind that studies the questions, as they should be studied, will acquire wealth and fame, but above all, the lasting gratitude of the millions of people, yet unborn, who will inhabit this continent.

It is difficult to get accurate data of the acreage under irrigation in the United States. We are apt to magnify the figures, but I am satisfied that we underestimate what has already been accomplished. Of the great projects we have perhaps more accurate knowledge, but of hundreds of small irrigation projects, we can have but little information. As to the future projects, it becomes a matter of conjecture, but I am satisfied that in another generation, at least one-tenth of all the arid and semi-arid country, exclusive of the mountains and the section given to forestry, will yield to the agriculturist. What the reclamation of the great acreage means to the United States and to the demands of the outside world for breadstuffs is beyond our comprehension and estimation. James J. Hill, the empire-builder, and one of the best informed men in the country on its resources, has prophesied that within a comparatively few years the United States will become an importer of breadstuffs. This anticipated disadvantage to our commerce, I believe, will be met by



BRIDGE ACROSS BOISE RIVER. THIS RIVER FURNISHES WATER FOR IRRIGATION FOR BOISE VALLEY, IDAHO

the reclamation of the arid lands from their aridity to great producing fields of wheat and other agricultural crops.

Irrigation works add to the fixed wealth of a country. It takes capital to construct irrigation works to gain settlers for the lands reclaimed and to operate the canals and reservoirs, but the capital for the most part is left in the vicinity of the works. Irrigation work and the bringing of lands into a condition of fertility, are largely matters of labor, and more largely than any other system of development in a new country, do they add to the permanent and fixed wealth. These works do not in time, like most other great improvements, wear out, but the great dams, reservoirs and canals, if properly maintained and operated each year, will add to their strength and betterment.

It is a well known fact, that the precious minerals of the United States are generally found in the arid regions. There are found great mines of gold, silver and copper. The coal fields are enormous; the quantities of iron found compare favorably with those great deposits found in the Eastern States. The development of the agricultural resources will necessarily aid in the development of the mineral resources.

The reclamation of lands will make it possible to develop great industries that are not even thought of in the arid and semi-arid parts of the country.

The sugar industry, new in the arid states, is but a few years old. The soil has been found adapted for the growth of beets and the climatic conditions are such as to make the business very profitable. With the continued growth of this business, arid America will soon make the United States an exporter of sugar, and it will hear no more of the complicated sugar tariff and differential duties.

We, with as much confidence and certainty, can speak of all kinds of crops common to the temperate and semi-temperate zones.

Our government and our system of government are no longer experiments. Under the government policies the nation increases in power, the country's development is rapid, and the growth of population between census periods is millions. We grow during good times, by bounds; in seasons of depression we do not go backward, but steadily forward.

Are we too hopeful when we say, we believe arid America under practical systems of irrigation and intense cultivation, will support two or three times the population that now live in the United States? With increased population will come greater wealth. There will be found new capital for investments. The desert will diminish rapidly. Plans, and yet other plans, will be devised to extort yet more crops from the now repulsive desert, and to raise water over and over again. A new empire is building and it will continue to build for centuries. Water will be the foundation of it. Water's application to the parched soil means success. Water is power. It is gold. It is life. Its use and its distribution will place the arid states among the wealthiest states of the American Union. It means railroads crossing and recrossing the continent. It means myriads of villages, towns and cities filled with great workshops, employing thousands of men skilled in mechanical arts and industries, but best of all, it means millions of people on farms and small owners of well and intensely cultivated fields.

ALONG IRRIGATION CANAL, YAKIMA COUNTY WASHINGTON

Courtesy Tennant & Miles

UNITED STATES GOVERNMENT TIETON PROJECT, YAKIMA VALLEY, WASHINGTON

IRRIGATION WORK IN OREGON AND WASHINGTON

IN the states of Washington and Oregon the Reclamation Service has commenced the construction of five irrigation projects. It has created opportunities for two thousand homes, which number will rapidly increase to ten thousand with the gradual completion in the next few years of these projects. In these two states the Reclamation Service is at present prepared to irrigate 103,500 acres, of which over two-thirds is in actual cultivation and receiving water.

There has been expended to date on the five projects under construction in Washington and Oregon the sum of $6,000,000 and an additional $6,000,000 will be required to complete them. Their total irrigable area is 335,000 acres and the value of their annual produce when fully developed has been estimated at $20,000,000.

It is not my purpose to describe these projects in detail. Bulletins having been issued which furnish full information and which may be had upon request.

I will confine myself to a statement of the principal features and to a comment upon some of the more general pha es of the work.

The Klamath project in Southern Oregon and Northern California will irrigate 175,000 acres, a large portion of which will consist of reclaimed marsh land and lake bottom. There are at the present time under canal 32,000 acres; the construction cost of the first unit is $30 per acre and the amount expended up to August 1, 1909, is $1,766,500.

The Umatilla project lies in Northeastern Oregon. Its first division will irrigate 20,000 acres, of which one-half is now covered by canals. The construction cost for the first unit is $60 per acre and the amount expended to August 1, 1909, is $1,159,000.

The Sunnyside project, in the Yakima Valley, will irrigate 100,000 acres, of which 58,000 acres are now under ditch. The construction cost of the first unit is $52 per acre and the total amount expended to August 1, 1909, is $840,000.

ONE HUNDRED AND SIXTY-SIX TONS OF ALFALFA, TWO CUTTINGS, ON FURNISH-COE PROJECT, STANFIELD, OREGON. THIRD CROP READY TO BE CUT AUGUST 28, 1909 FOURTH CROP LATER. CONTRAST MAN WITH STACK

The Tieton project is also situated in the Yakima Valley, in close proximity to the city of North Yakima, and will irrigate 30,000 acres. The main canal, which involves twelve miles of heavy canal work and tunneling, will be completed during the current year, and one-third of the distribution system will be finished for use during next year's irrigation season. The construction cost has not yet been announced. The amount expended to August 1, 1909, is $1,541,000.

The Okanogan project lies in Northern Washington, along the border of the Okanogan River, and will irrigate 10,000 acres, of which one-third is now receiving water. The construction cost of the first unit has been announced at $65 per acre. The amount expended to July 1, 1909, is $492,000.

Acre Cost of Construction

It will be noted that the construction cost per acre varies greatly, ranging from $30 to $65, equivalent respectively to $24 and $51, on the basis of interest at five per cent on deferred payments, which is the lowest rate charged by private companies.

Everyone familiar with the subject knows that water-right charges over the entire West have rapidly increased during the last few years; that private companies in many localities charge $75, $100 and $125 per acre and that the higher-priced rights sell more rapidly where conditions are favorable than do rights at lower prices in less favored localities.

There has been a similar decided upward tendency in water-right charges on Carey act projects.

The reason for this is that prices for labor and material have increased; that the element of time involved in settlement and waiting for financial returns is better appreciated and more properly allowed for, and that recent irrigation development has generally had to provide for expensive storage features.

There has been a similar rise in the increased value of the products from irrigated farms in comparison with which the water charges often seem trivial.

Storage of Water

The projects under construction in Washington and Oregon differ in almost every feature of constructive detail, and there are great differences of climate and soil. They have, however, one element in common, namely, that it has been necessary to provide storage reser-

THE CONSCIENCE OF THE COE DAM

A solid concrete core sealed to the solid rock on bottom and sides and going up through the center of the dam. This will impound the waters of the Umatilla River, Oregon, and create a reservoir covering eight hundred acres. Furnish-Coe project, Stanfield, Oregon

voirs, as the low water flow in streams from which the water is derived has been partly or entirely appropriated. It is only on the Klamath project, where a large unappropriated low-water flow could be secured, but even there for a large portion of the project dependence has to be placed on storage of flood waters.

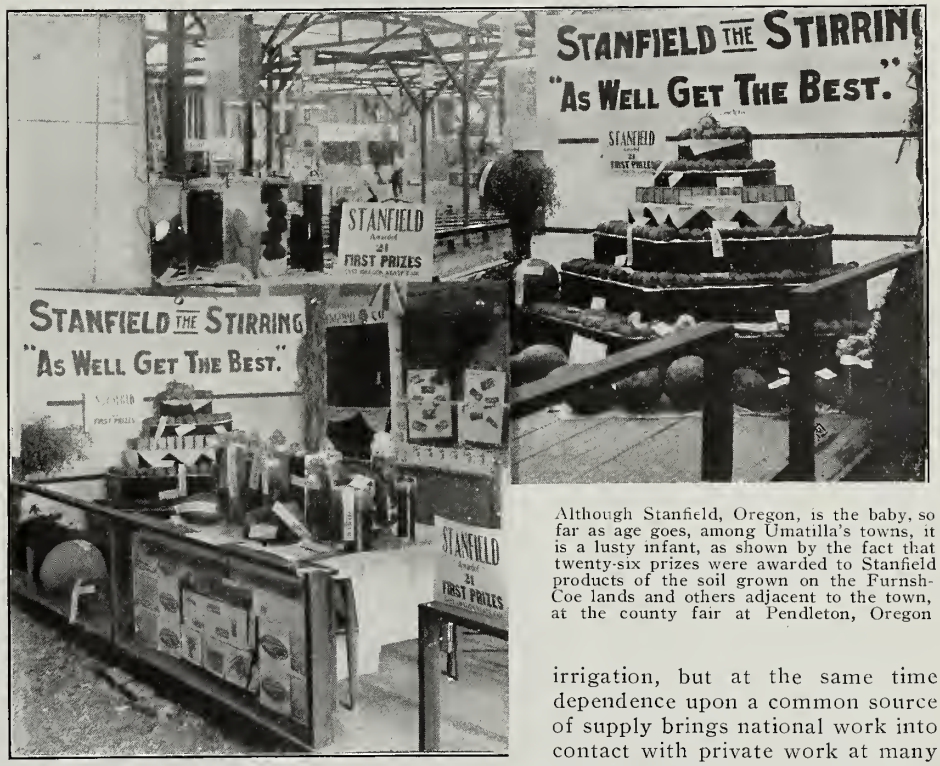
The reservoirs which have been constructed or are now in course of construction, are as follows:

	Acre Feet
Clear Lake reservoir, Klamath project	363,000
Cold Springs reservation, Umatilla project	50,000
Keechelus reservoir, Sunnyside project	15,000
Kachess reservoir, Sunnyside project	19,000
Cle Elum reservoir, Sunnyside project	23,000
Bumping Lake reservoir, Tieton project	30,000
Salmon Lake reservoir, Okanogan project	2,000
Conconully reservoir, Okanogan project	14,000
Total	516,000

The Keechelus, Kachess and Cle Elum reservoirs can be enlarged so as to hold 778,000 acre feet, which will bring the aggregate storage capacity up to 1,237,000 acre feet. Additional reservoirs are in contemplation in the Yakima basin and on the Umatilla River, with a view to utilization of the water resources to the utmost economical extent.

It was due to the passing of legislative acts in 1905 in Washington and Oregon that a proper foundation could be laid for the securing to the United States for the future use of irrigators, right to stream flow and stored waters during the period which must necessarily elapse between the initiation and the completion of these large works. These acts also provide for co-operation between Federal and state governments as regards the division and disposition of state lands which might fall under reclamation projects.

It is fully realized that the control which the state laws have permitted the United States government to assume over storage facilities carries with it a certain moral obligation for their early full development. The storage possibilities in the Yakima Basin are especially a case in point. The large lakes at the head waters of the Yakima River offer a magnificent opportunity for the conservation of the flood water. At each of these lakes claims were asserted by private interests which, if left undisturbed, would probably have led to limited development, having regard only to the greatest benefits to the claimants and without reference to the ultimate economical possibilities and the interests of the people of the entire valley. With due consideration of such rights as had accrued, the government has acquired control and has built small temporary dams for immediate necessities. A careful program has been worked out for the successive construction of large dams at the outlets of the lakes and for utilizing storage possibilities to the greatest extent.



Although Stanfield, Oregon, is the baby, so far as age goes, among Umatilla's towns, it is a lusty infant, as shown by the fact that twenty-six prizes were awarded to Stanfield products of the soil grown on the Furnsh-Coe lands and others adjacent to the town, at the county fair at Pendleton, Oregon

Conflict With Private Interests

The national reclamation work has resulted in great stimulation of private irrigation, but at the same time dependence upon a common source of supply brings national work into contact with private work at many points, and occasionally there has been apparent conflict of private, corporate and public interests.

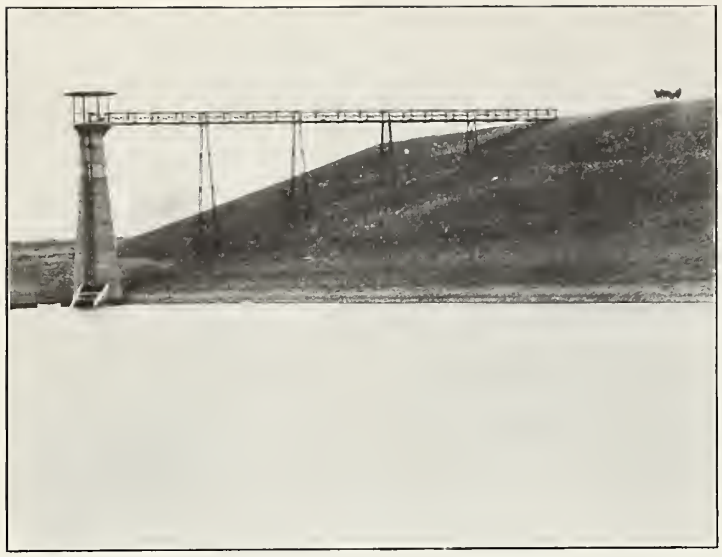
On the Klamath project, for instance, some private companies controlled water rights and rights of way which, if left entirely untouched, would have made economical and comprehensive utilization of the water resources impractical. It would have made it impossible for the United States on behalf of the irrigators to enter this promising field. In this instance properties were purchased outright, and unity of purposes, as well as certainty of full development along well defined lines, resulted to the benefit of irrigators and the public.

On the Okanogan project water rights to the Salmon Lake reservoir were surrendered by its owners in exchange for government water rights on mutually satisfactory terms.

On the Umatilla project rights were established to a portion of the flow of the Umatilla River, and the property rights of a private company were purchased. In the management of the works the most scrupulous regard is had for the rights of others dependent upon the same source. Proper measures are now being taken under the new Oregon water code for final determination of respective water rights to Umatilla River water. In

STACKING ALFALFA HAY IN BAKER VALLEY, OREGON

Alfalfa yield from four to seven tons per acre and is being purchased by the alfalfa meal mill at from $8 to $10 per ton in the stack, according to the distance from Baker City, Oregon. Ten years ago this land was considered worthless, but the magic influence of water has made this transformation



CONCRETE PYRAMID OF STEEL BRIDGE WHERE THE WATER FLOWS FROM THE RESERVOIR INTO THE DITCHES OF THE UMATILLA PROJECT, HERMISTON, OREGON

the Yakima Valley the service has had to solve a problem more difficult, it is believed, than any in the Northwest.

The low water flow on the Yakima River, amounting to 2,000 second feet, was found to be practically all used by some sixty canals at the time the Reclamation Service took up the study of Yakima Valley irrigation. There was no certainty of respective rights, however, and conditions were ripe for expensive, bitter and protracted water litigation, which, in fact, had already commenced and threatened to spread over the entire valley. No water rights would have remained unquestioned; no confidence would have been possible in the minds of investors with the grave uncertainty as to water title, and during the long period of litigation development would have come largely to a standstill. Complications which existed at the outlets of the Yakima lakes would probably have become more complex and would have presented a fruitful source of future legal struggle.

This extensive litigation has fortunately been avoided and order has been created out of chaos; through co-operation of the Reclamation Service with the canal interests and public spirited citizens in the Yakima Valley, rights have been amicably adjusted outside of the courts; complications at outlets of the lakes have been removed; water properties amounting in value to many millions of dollars have been satisfactorily divided between numerous claimants; private irrigation has expanded more rapidly than ever, and the rights of the government have become established without trespassing upon the rights of any legitimate claimant and without any lawsuits so far, except a few condemnation suits and a suit for the ousting of a squatter from government land, which has been determined in favor of the government, and has incidentally led to the upholding by the United States Circuit Court of Appeals for the ninth district, sitting at San Francisco, California, of the constitutionality of the reclamation act. In regard to control of storage rights in the Yakima Valley it may be said that certain districts dependent thereon for their ultimate irrigation, but not as yet included in any reclamation project, have shown a natural desire to secure the necessary storage rights for their future irrigation.

The importance of this question is fully understood, and while no definite ruling has as yet been given by the Secretary of the Interior, it is certain that every effort will be made to prevent injustice being done to any locality, and at the same time keep the way clear for full development. It is not unlikely that the proposition will be favorably regarded of supplying storage water to land-owners not coming under any irrigation project who may combine in the construction of canals for themselves. It must be remembered in this connection, however, that requirements of the law must be strictly complied with, which prescribe that storage water can only be furnished directly to the water users themselves under certain restrictions intended to secure the highest use of the water for the largest number and not to corporations.

UNITED STATES RECLAMATION SERVICE PIPE YARD, UMATILLA PROJECT, HERMISTON, OREGON

The subject of drainage in connection with irrigation is one of the utmost importance and has received early attention, both from its engineering and administrative aspect. Where canal systems have been taken over, as in the Sunnyside and Klamath districts, the evil results of lack of drainage have already become apparent, in many places threatening the ruin of large areas of valuable land.

Private irrigation companies have not generally acknowledged any obligation to build drainage ditches in connection with irrigation canals and have left the work of drainage entirely to the individual land-owners.

Serious consideration has been given to the question whether drainage systems should be built as a part of project works and, if so, the extent to which the construction of drainage ditches should be carried. No general policy has as yet been established. It may be said, however, that a large amount of money has

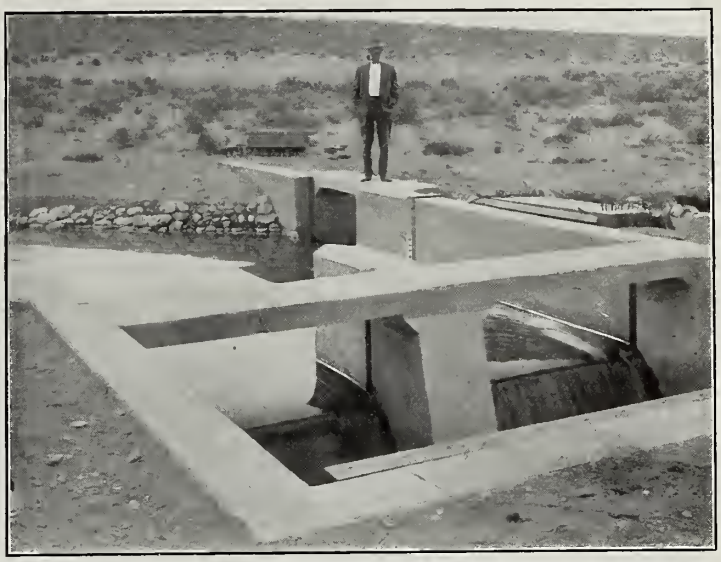
ON THE COLUMBIA RIVER AT PASCO AND KENNEWICK, WASHINGTON NORTHERN PACIFIC RAILROAD BRIDGE IN BACKGROUND

been authorized to be expended for work on Klamath and Sunnyside projects for the purpose of providing main drainage channels, which bring the possibility of thorough drainage within the reasonable reach of private land-owners.

Northwest Irrigation Possibilities

There are 75,000,000 acres of mostly arid land lying east of the Caseade Mountains within the states of Washington and Oregon. It is true that much of this is not irrigable; it is also true that of the irrigable part but a small proportion of land can be economically served with water. Neither can it be denied that the physical conditions will probably prevent for all time the use for irrigation purposes of more than a small percentage of the flow of the main river traversing this area owing to its flat grades and its depth below adjoining table lands. But it is also true that there remains tributaries of the Columbia River, such as the Snake, the Spokane, the Chelan, the Methow, the John Day, the Deschutes, the Powder, the Grand Ronde and numerous rivers in Central Oregon which furnish large supplies and opportunities for storage, sufficient for the irrigation of several million aeres, and that most of this land is of the highest fertility, and capable of large production under the favorable climatic conditions. It may be confidently expected that the rapid development of pumping projects along the Columbia River noticeable these last years will continue at an increased ratio until the limit of feasible pumping lift has been reached, and while the total area thus irrigated will use but a small fraction of the flow of the river, it will nevertheless contain many thousand aeres of the most valuable lands in the two states.

Mueh as has been done, it may be said that irrigation in these states is as yet in its infaney, and that in utilizing low water flow of a few streams, where diversion was easy and cheap, only a beginning has been made. The Reclamation Serviee has studied many projects in Oregon and Washington aside from those now under construction, such as, for instance, the Malheur and John Day projects in Oregon and the Priest Rapids and Palouse projects in Washington. The first studies in Washington were directed to the consideration of the Big Bend project, which, as an illustration of irrigation possibilities in these states, deserves special mention. To the west of the town of Lind and to the south of the line of the Great Northern Railway there is a plateau surrounded by the big bend of the Columbia River, containing 2,500,000 acres, all lying at an elevation of less than 1700 feet above the ocean, all in semi-arid or arid condition, of which probably at least 1,000,000 acres consists of excellent tillable land, readily irrigated when once water is placed on the high plain.



CONCRETE BY-PASS AND CUT-OFF, UNITED STATES GOVERNMENT UMATILLA PROJECT, HERMISTON, OREGON

SHOWING MAIN CANAL, UNITED STATES GOVERNMENT UMATILLA PROJECT, HERMISTON, OREGON

The Spokane River is the natural source of supply. Its elevation below the falls is sufficient to cover the land, and the summer flow can be reinforced by storage. The physical difficulties which confront gravity diversion, both as regards character and length of canal, are extraordinary, however, and the only prospect of rendering a project of this kind financially feasible lies in the inclusion of a large area of land. The construction of a canal will be required on difficult side hill location, both long and of large capacity, involving the expenditure of an enormous amount of money, to which must be added the cost of distribution system and storage.

A study of this situation made it apparent at an early date that if the project were found to be financially feasible its cost would place it far beyond the possibility of work carried on by the reclamation fund.

The great problem before the Reclamation Service has been, not the finding of feasible projects, but the intelligent selection among numerous possibilities, and in this respect on the one hand it has listened to claims advanced by settlers and land-owners in various localities who express their natural desire for receiving benefit of irrigation under the reclamation act, and on the other hand it has considered the matter from the standpoint of the greatest benefit to all, including future settlers of land now vacant, whose voice cannot be heard.

The principal work in the near future will be, owing to limitation of the reclamation fund, to complete the project works now commenced and to prove their success by a rapid return of money to the fund, whereby the selection and construction of new projects will be hastened and the available means may be made to rotate for the greatest benefit to all and as contemplated by the law.

ONE OF THE CANALS WHICH CONVEYS THE WATERS OF SALMON RIVER TO THE LAND UNDER THE GOVERNMENT IRRIGATION PROJECT, OKANOGAN, WASHINGTON

OREGON'S LAW CONTROLLING WATER RESOURCES

BY JOHN H. LEWIS, STATE ENGINEER OF OREGON

THE State of Oregon has recently adopted a system of public control for her water resources. This system is in advance of other states, in that rights to the use of water for power development, are limited to a period of forty years, subject to renewal under the laws then existing. Compensation to the public for the use of this resource is also provided.

INTAKE WITH CONCRETE GATES, GOVERNMENT PROJECT UMATILLA COUNTY, OREGON

Under the old law, no foundation existed for titles to water. Utter confusion prevailed as to the legal status of a water right. Litigation among water users grew to such an extent as to prove a serious burden upon irrigated agriculture. Dams and flumes were annually destroyed and lives threatened in community quarrels to secure a proper division of streams. Under such conditions, capital declined to invest, and homeseekers went to other states, where the purchase of a water right did not mean the purchase of a lawsuit. To remedy these conditions, a complete code of law was enacted, which became effective February 24, 1909. The ultimate object of this law is to secure a proper division of streams among those entitled to the use of their waters. It is not supported by any constitutional provisions relating to water, but rests entirely upon the police power of the state to preserve the public peace, health and safety. Its enactment is of as great importance to Oregon as was the making of the "Doomsday Book" in 1085 by William the Conqueror, which was the first attempt in England to systematize land titles. The new law is an attempt to systematize water titles in Oregon, and its enforcement devolves upon the state engineer and the division superintendent of each of the two divisions into which the state has been divided. County water right records have been abandoned in favor of the central office with large powers. Besides a few miscellaneous provisions, this law is divided into three main divisions, which will be taken up in order: (1) The determination of early rights; (2) the granting of new rights, and (3) the protection of all rights when determined.

The state engineer and the two superintendents sitting as a board, have power to determine all water rights on a given stream, upon the application of any water user. This determination is based upon field surveys by the state engineer and testimony taken by the superintendent. The testimony is in the form of answers to questions upon a simple blank form, which is sent to each claimant thirty days in advance of the date of hearing. When all of the claims have been subscribed to under oath before the superintendent, they are, after notice, submitted for the inspection of all interested water users, and contests permitted. In this way, accuracy of information is assured, as self-interest will compel each water user to see that his neighbor's claim is not in excess of that to which he is entitled.

Upon the evidence collected an order will be entered by the board, setting forth in tabular form the priority, location and extent of each right. This order becomes effective at once and can be enforced by the appointment of a water master. It is later filed with the Circuit Court for confirmation. If no exceptions are taken within thirty days, a decree must be entered, affirming the determination of the board. A water right certificate is then issued by the board to each claimant, based upon the decree. This certificate will be to the water right what the patent from the United States is to the land title. The law operates to make the water appurtenant to the land where used. The fees, payable in advance, are expected to about equal the cost to the state of these determinations.

The demand for such a law is shown by the fact that applications for the determination of rights to water on forty different streams have already been filed with the board. About one thousand claimants are involved in one of these determinations. The experience gained by the board in the first determination is carried to the next stream, perhaps in another judicial district, and their report of defects in the law will be a valuable guide to the Legislature for further action.

No right to the use of water from any stream can hereafter be acquired without compliance with law. This insures a complete and reliable record of new rights, which is necessary to promote the development of our water resources. The reliability of this record is further assured by the penalty making it a misdemeanor to divert water until the issuance of a permit by the state engineer. This officer has power to limit the amount of water asked for, and to fix the time within which the works must be completed and the water applied to beneficial use. A permit can be denied where the proposed use is a menace to the safety and welfare of the public. The fees, payable to the state in connection with the granting of permits, are expected to fully meet the cost of administration.

No protection can be granted by the state for early rights until after they have

MELONS AND FRUIT AND IRRIGATION CANAL, KENNEWICK, WASHINGTON

ALONG THE IRRIGATING SYSTEM, HOOD RIVER VALLEY, OREGON

been determined. A single determination on a stream is final, for the reason that it involves all claimants. New appropriations cannot complicate the situation, for the reason that such rights will be fully defined and recorded at the time of initiation.

By making water appurtenant to the place of use, a uniform system of township plats can be employed for recording determined rights, so that only a few seconds will be required to ascertain whether a given tract of land has a valid water right.

This information will untimately be published in tabular form for the convenience of the water user, the prospective investor, and especially as a guide to the water master, whose duty it is to distribute the water in accordance with such rights.

When all the rights on any stream have been determined, a water master will be appointed, who can be called out during times of scarcity, to protect any water user. The headgates of all ditches above will be adjusted to admit only the amount of water to which each is entitled. Ditches of late priority may be entirely closed. The law makes it a misdemeanor to disturb a headgate when lawfully closed by the water master.

Stored water, when released into the natural channel of a stream, is also protected by the water master and the owner permitted to divert an equal amount, less that lost in transit by seepage and evaporation.

The basis of the law is priority of appropriation and beneficial use. The use is the basis of the right, and not the capacity of the ditch or the appropriation made. Upon termination of the time allowed in the permit, proof is taken by the superintendent in the same manner as for original determinations, and a water right certificate is then issued, based upon the extent to which the water has actually been applied to beneficial use. Old rights are thus placed upon the same footing as new rights.

This system of public supervision is satisfactory to the general taxpayer because it is self-supporting, promotes the general prosperity of the state, and may, in future, prove a source of revenue. It is satisfactory to the water user because he sees in it the end of vexatious and costly litigation, and can devote all his energies to the growing of crops. It is also satisfactory to the prospective settler and to the investing public, for the reason that a foundation in law has been provided, for future investments.

THE GRAND FINISH OF THE WATERMELONS

Picture taken on Thomas Richards' farm, Stanfield, Oregon, after $200 worth had been sold from an acre patch. Mr. Richards to the left. Volunteer watermelons which came up in an orchard belonging to Page & Son of Portland, Oregon, and which grew spontaneously, without care or cultivation, took first prize at the fair just held in Pendleton, Oregon

IRRIGATION SITUATION IN STATE OF WASHINGTON

ADDRESS BY DR. E. A. BRYAN, PRESIDENT STATE COLLEGE OF WASHINGTON, AT IRRIGATION CONGRESS, AUGUST 9, 1909

ONLY in comparatively recent years has Washington come to be looked upon as one of the great irrigation states. The fact is, our brethren of the Eastern States are even yet somewhat mystified by what seems to them conflicting reports as to the climatic and agricultural conditions of the state. Stories of cloudy skies and heavy rainfall, perpetual sunshine and sandy desert, dense forests and sage brush plains, bunch grass prairies, and immense peat bogs, as they filter back to the old home states, seem to present a strange jumble of contradictions. But if one will consider for a moment the physical features of this great state, he will see that the foundations of the stories and of the state's unique and strategic position lie in these same physical features. I say nothing of her great salt water line of deep and protected waters, nor of the great rivers, arteries of commerce and agriculture, which traverse her system, but ask you to consider for a moment her surface features. Carry in your mind for a minute a horizontal line from the surface of the Pacific Ocean, running eastward as far as Idaho. Then above it, carrying another line, lying upon the surface of the land, marking the rapid changes of altitude. This line will rise quickly from the ocean and passing over the comparatively low coast range, will drop to the sea level in the great Puget Sound Basin. It will then rise rapidly to the rugged crest of the Cascade Range from five to seven thousand feet above sea level, with those great, sentinel peaks, Baker, Rainier, St. Helens and Adams, clothed in eternal snow and ice, rising in peerless majesty above the summits of the lesser peaks. Your line then descends more gradually with a longer sweep until it touches the mighty Columbia, at an elevation of only four hundred feet above the sea, and again rises toward the distant Rocky Mountain system by more gentle ascent until on the Idaho line it has attained an average elevation of about 2,500 feet. Infinite variations from north to south and from east to west do not greatly disturb this general outline. And rainfall and climate and agricultural possibilities are, in outline, determined by these surface lines. To this is due that marvelous variation in soil, climate, and industries of this great state. Think for a moment of the great corn belt, stretching from Pittsburg to Omaha and from Duluth to New Orleans, stretching through twenty degrees of longitude and as many degrees of latitude, and you do not have so great variation of soil and climatic condition, nor so great consequent variation in the occupation of the inhabitants, as within this state. Then every producer of raw material is the competitor of every other. Here, he supplements his brothers' activities. In this fact lies the industrial possibilities of the Northwest. At Pasco the annual rainfall is five inches, and the necessity for irrigation is absolute. At Ocosta-by-the-Sea it sometimes is ten feet, and cynics say it rains pitchforks. How does all this come about? The warm and moist breath of the Japan current is breathed upon the cool breast of our western slope and the "garnered fatness" of the clouds drops in mist and rain and snow upon it. The result is a dense forest cover which has given us that wonderful heritage, the last great forest of the United States, which the Lord forbid that we should utterly destroy. The result is those mighty fields of ice and snow in the upper Cascades, seventeen huge glaciers, according to the count of some, surround the summit of Mt. Rainier with an ice cap, that to us, seems eternal. Did you ever consider those great ice and snow fields in the light of reservoirs? They are the greatest and cheapest reservoirs possible. When we need the water less, they are growing in size; when we need it more, they are giving down in increasing abundance as the weather grows hotter and the cry of plant life is greater. No dam to hold the supply, no repairs, no breaks—and an automatic reservoir whose value the people of the state do not half appreciate.

SCENES IN GRANDE RONDE VALLEY, UNION COUNTY, OREGON
Stacking hay. Hauling wheat to the warehouses. Threshing grain. Wheat that will go fifty bushels to the acre

The serrated crest of the Cascades, as of all ranges, does not follow an even line. Peak and gorge lap past eastward and westward, and so the rich moisture of the western breezes clothes the eastern slope of the crest with verdure and stores water and snow in abundance. But as the land drops off to the lower level of the Columbia, the moisture capacity of the air is increased, and it will give no more down, and so sage brush desert is inevitable. It is from these physical conditions that we have those splendid irrigation streams, the Yakima River, the Wenatchee, Chelan, Methow, Klickitat, and their tributaries, rising in the high Cascades, fed by enormous supplies of rain and snow, provided at their source with vast natural reservoirs and with capacious basins where the hand of man may store almost unlimited supplies of water. Crossing the Columbia, to the eastward the line rises over the great Columbia plateau, where the land can produce to its maximum efficiency only by irrigation. Soon it reaches the belt of "dry land" farming, which must in time give way to irrigation, when the bunch grass belt and the vast wheat fields of the Inland Empire.

It was by no means strange that the humid western and the semi-humid rich eastern belt of the state should first attract the settler, and that for a generation the development of irrigation should have been confined to the small streams, easily diverted, and to individual developments, and that Washington should have entered at so late a date the advance column of irrigation states. Even yet, it is in the beginning of its career. With less than a quarter million of acres under water, it has four millions of acres where water is essential to its most efficient production. Yet, in the remarkable quality of its lands and their adaptability to the production of the more valuable crops, in the abundant water supply, in their proximity to fine markets for the product, and in the climatic conditions of the irrigated belt, the State of Washington claims a place in the advance guard of irrigation states. In one respect, while not unique, our situation is most fortunate. The low level of our largest development gives an immense advantage in fruit production, particularly in so high a latitude. We have an immense area of the richest alluvial soil, under water, or soon to be put under water, which is only from 350 to 700 feet above sea level, with a summer climate marvelously adapted to the production of the highest priced products. The valleys of the Columbia, the Snake, Yakima, the Wenatchee Rivers, and others, are almost ideal in this respect. The higher valleys, such as the Spokane Valley, are also making a splendid showing. Hitherto, we have relied chiefly on gravity to carry the water upon the land, but the feasibility and adaptability of pumping projects have been demonstrated beyond peradventure, and as these are usually installed in connection with unlimited supplies of water, they have the advantage of abundance of water at the very period when the gravity systems are most in need and have scantiest supplies. A word of caution against attempting a greater lift than "the traffic will bear," or providing too meager water supply for the maximum crop, is timely. Storage has barely begun, and this must be one of our great resources for the future. Our largest product, and the one which will eventually revolutionize eastern Washington, the Big Bend Project, must, on account of its magnitude and cost, await future developments, but the day will yet come when that great, rich claim will blossom as the rose.

FRUIT SCENES FROM LA GRANDE, IN THE GRANDE RONDE VALLEY, UNION COUNTY, OREGON
Three-year-old apple orchard. Packing apples for the Eastern market. In the shade of the old apple tree

The rapidity of our development and the deep interest in it is indicated, if not measured, by the real estate market. I well remember when the richest land the sun shines on in the Yakima Valley went begging at $40 to $50 an acre, with ample water supply. Today the prices for the same lands seem fabulous to the uninitiated. The concomitant of such development, is, of course, the wildcat scheme with scanty and insecure water supply, and limited responsibility or none on the part of the promoter. The state should, by all means, enact laws for the protection of the innocent purchaser of small tracts in such lands. It is but natural that the eyes of the multitude should be turned to the largest enterprises and those from whence rises the greatest noises. But few states offer

MORDEN BROTHERS' RANCH, ON IRELAND RIDGE, MOSIER DISTRICT
The ranch consists of 160 acres stretching across the ridge, eighty acres being in Hood River County. In addition to the older trees shown in the view there are thirty acres planted to Yellow Newtowns, Spitzenbergs, Ortleys and Arkansas Blacks

the possibility for small developments that Washington still offers. Even Western Washington, which ranks as a humid region, has yet to learn of the great possibilities of irrigation from the waters everywhere hanging above them. In products, in prices of land, and progress in the art of applying water, and satisfactory returns to the farmer, we have every reason to be proud of the State of Washington.

Of one thing we have no reason to be proud, but every reason to be ashamed, namely, the state of things as to the legal rights of the appropriator of water and the definition of those rights. We have no state irrigation engineer, no state department for determining and controlling the use of water, no adequate record of existing rights and titles, no satisfactory bodies, either of law or adjudicated cases to go by. We are still in part under the tyranny of the Riparian doctrine, which is at the antipodes of the doctrine of appropriation. Most of the adjudicated cases have been dominated by that ancient incubus of English law. Our constitution made a feeble effort to set us right, but stopped short of the mark. Our legislatures have not had the courage to attempt to settle the question, and our courts have acted upon ex-parte evidence, in which only the litigants and not the people have been represented, and in which many parties in interest have not had "their day in court." The Reclamation Service, in desperation, toggled up a vast agreement among water users in our principal irrigated district in which the principle seemed to be to guarantee to everybody about all the water supply claimed and then to begin at that point to provide more. But this plan was weak internally, and weak in that the rest of the state was left out of it. The Irrigation Code Commission proposed a simple and seemingly efficient plan of adjudicating existing water rights, providing especially for determining of the physical facts, which are the most important facts for the court to consider at the outset, and which have been almost uniformly neglected in adjudications thus far. There can be no proper adjudication except by entire stream systems. There can be no proper adjudication in the absence of a knowledge of the physical facts. There can be no proper adjudication unless a complete state department with quasi-judicial and administrative functions, secure the evidence upon each stream system. The old proposed code, following the Wyoming and similar systems, in the method of adjudication, partly through the natural timidity of the public, partly because the great companies feared a rate fixing clause, which was the necessary concomitant of the clause granting to individuals and companies the power of acquiring reservoir sites, and partly through the indifference or lack of support of the Reclamation Service itself, which may have feared lack of co-operation on the part of a state irrigation engineering department, the code provisions received from the legislature and from the people scant recognition, to say nothing of consideration, and we, the people of this great state, quietly folded our hands and shut our eyes until the day should come when we should tear each other's eyes out fighting over the water supply. The man down stream has no protection from the man above, who, without a record to go by, may, innocently enough, divert water and make his improvements in good faith, not knowing that in the end all of his toil may go for naught. It is idiotic for the people of a great state, with still greater possibilities of irrigation and development, not to face the problem and settle it, at whatever cost. A pioneer in irrigation in this state once remarked: "I should like to know before I die what my water rights really are." Dark clouds of litigation lower here and there, and the timid legislator, who fears failure of re-election more than he loves the state's good, hides away from the task of establishing justice and the public safety.

FROM THE ORCHARD OF L. E. HOWE, MOSIER, OREGON

THE DUTY OF WATER—ITS ECONOMICAL HANDLING

ADDRESS BY ALEXANDER McPHERSON, SECRETARY IDAHO BOARD OF HORTICULTURE, AT IRRIGATION CONGRESS, SPOKANE

ONE of the great resources of the Nation is her water supply, and the handling of this great resource in the most economical manner is of great importance. In the past few years considerable attention has been given to the question of storing the flood waters, and conserving them in the great water sheds. But the question of conserving the moisture in the soil has not been given due consideration.

While water was plentiful and land was cheap, this phase of the question did not appeal to the masses of the people, but as the price of land and water increases, the duty of water becomes a question of great importance, with a low duty of water, the limit of the reclamation of arid lands it at hand, while with a high duty such as is possible, we have only begun.

It is not the purpose of the speaker to go into this subject in a technical way, but simply to call attention to the great work that remains to be done in this direction. In discussing the duty of water, there are many features to be taken into consideration, such as the kind of crops, lay of the land, size of the soil particles, depth of the soil, precipitation, and the time and season this occurs, etc. Yet, in not one of these do we have a constant factor to work on.

It can readily be seen that there is a great field open for the irrigator of the arid regions, and it will take years of patient labor to demonstrate the greatest efficiency of water, and bring it up to a practical working basis. To this end, permit me at this time, to speak of some of the work in Southern Idaho along this line. Idaho, a pioneer in this work, is doing the work along practical lines.

Here we have at least three types of soil. First, a very fine soil usually called volcanic ash, composed largely of volcanic ash, clay particles and erosive material from the lava. Second, a soil composed of nearly the same material, but of a more coarse texture. Third, a very sandy loam. In my experience I discovered, first, that the capacity of soil to hold moisture was inversely proportioned to the size of the soil particles. Second, that the frequency and duration of each irrigation is also largely governed by the size of the soil particles, although the shape of the particle made some difference. I also found that the finer soils, if in good tilth, would hold more moisture than otherwise, but in the coarser soils, the condition as to tillage did not make much difference. Third, that the actual amount of water to produce the maximum yield did not vary materially with the size of the soil particles, if the water

ENTRANCE TO THE ORCHARD AND HOME OF L. E. HOWE, MOSIER, OREGON

WALLA WALLA, WASHINGTON, CALLS ITSELF THE AGRICULTURAL PARADISE—FRUIT AND FARMING

was properly applied. Fourth, that the coarser the soil the more frequent irrigation, but a corresponding less amount at any one time. Fifth, the more humus in the soil, the greater its capacity for holding moisture. Sixth, that in general farm crops, alfalfa required the greatest amount of water, and grain the least. Twenty-four inches of water applied produced the maximum crop of alfalfa, amounting to seven tons of baled hay, while thirty-six inches produced six and one-third tons, besides the field was damaged to some extent by excessive use of water. Sixteen inches of water applied produced seventy-two bushels of wheat, and twenty-four inches, fifty-nine bushels.

Up to a certain amount, the application of water increases the yield, but after then, the yield was decreased proportionately with the increased amount of the water supply. Twenty inches of water was the average amount applied on all the most successful farms where twenty or more different crops were produced, giving a maximum yield. These figures with regard to water, include that of rainfall during the months that the crops were growing, so that the actual amount of water supplied by irrigation was less than sixteen inches on the average. The time that the greatest amount of water was required per acre was during the months of July and August on long seasoned crops, but the greatest amount of water on grains was in the month of June.

It is really surprising how little water is actually required to produce a crop, and in many localities, if the rainfall occurred at the proper time, irrigation would be unnecessary, and if it were not for the great evaporation which takes place in certain of the arid districts, the rainfall, if properly distributed, would produce larger crops than are sometimes now produced with irrigation, especially where an excessive amount of water is used. The average duty of water in the State of Idaho at the present time is one cubic foot per second per acre, continuous flow for fifty acres, or one miner's inch.

If this amount could be cut down one-half, it would add millions of acres of tillable land to the great State of Idaho, which is available provided water can be applied; and if, by investigation and demonstration of the Bureau of Irrigation Investigation, together with others who are interested in this work, combine their efforts and bring about a higher duty of water, in my judgment, there would be larger crops produced, more intensive farming, and double the tillable area in the State of Idaho, or of the great arid plains of the North and West. As much as our agriculture is and always will be dependent upon irrigation, this is a work that should be of interest to every man, as it will create more homes for the people, add millions to the wealth of the Nation, and it is every citizen's duty to lend their best efforts in furthering this work to the end, and all may be benefited.

EXHIBIT OF HONEY AND HONEY PRODUCTS FROM BOISE VALLEY, IDAHO

MILLION DOLLAR DAM AT MILNER, IDAHO, WHICH DIVERTS WATER FOR NORTH AND SOUTH SIDE SYSTEMS OF TWIN FALLS, IDAHO

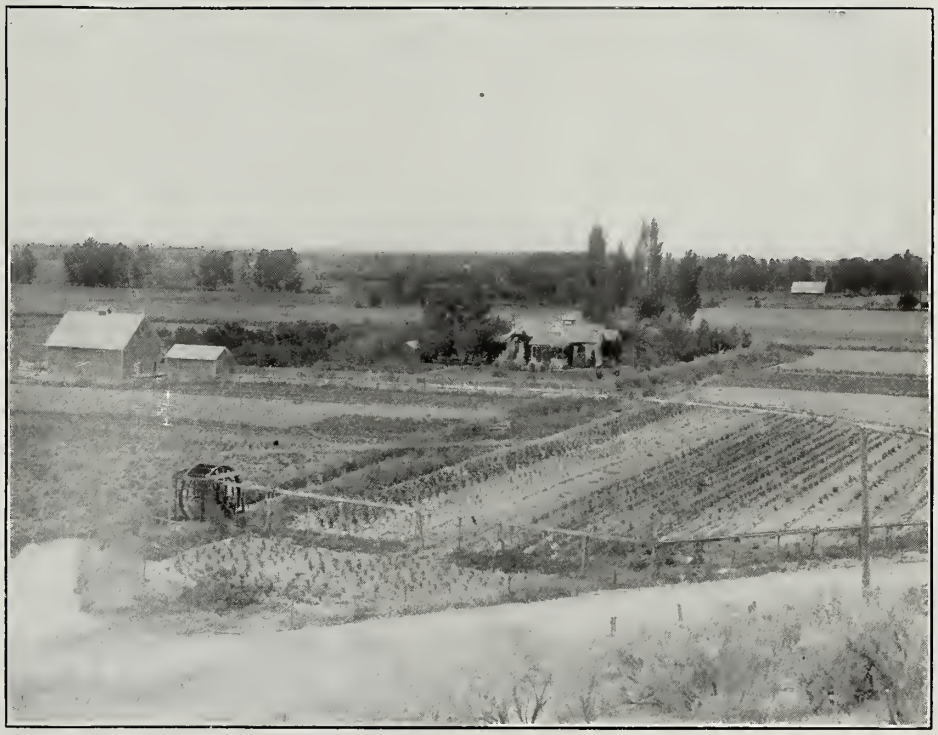
THE HORTICULTURAL POSSIBILITIES OF IDAHO

BY JUDGE FREMONT WOOD, PRESIDENT IDAHO STATE HORTICULTURAL ASSOCIATION, BOISE

SITUATED in the great Snake River Valley and along its tributaries, a large portion of Idaho presents unparalleled opportunities for horticultural pursuits. No occupation involving the tillage and cultivation of the soil involves such great care in the selection of its location, as regards soil, climatic and surrounding conditions, as does the pursuit of horticulture, or particularly those branches of horticulture which supply a vast portion of the fruit product which enters into the world's commerce.

Idaho, as far as soil and climatic conditions are concerned, possesses every favorable feature sought for by the horticultural enthusiast. But with the small beginnings along the lines of general fruit culture, we have fully demonstrated that the excellence of our products is so far above the ordinary standard that we have been enabled to overcome distance and the heavy freight rates occasioned thereby, and still find an unparalleled market for our fruit at prices vastly in excess of the amounts realized for what has always been recognized as standard fruit in the Eastern States.

For many years Idaho fruit growers have shipped their products to Eastern markets and commanded fancy prices for the products of their labors wherever intelligent direction has been given and an honest effort made to place nothing except the best quality of fruit upon the market, at the same time packing in an attractive and pleasing manner so that the customer knows that he is receiving sound and perfect fruit. These small beginnings amply justify extensive engagement in horticultural pursuits along extensive lines in many portions of the state. What greater inducement could be offered to the new settler, the home builder, or the capitalist desirous of entering upon horticultural pursuits on a more extensive scale, than to lay before him the magnificent results that have been produced for a series of years by some of our best orchardists?



FARM SCENE IN BOISE VALLEY
The pretty homes are surrounded by thrifty orchards, alfalfa fields and acres of sugar beets, bringing wealth and contentment to the owner. A water wheel is used here to lift water from irrigating canal

APPLE ORCHARD OF JUDGE FREMONT WOOD, BOISE, IDAHO
Showing fine cultivation, and also note the splendid method of pruning. Two-thirds of the fruit can be picked from the ground, saving time and labor

The reports of the great commission houses handling and selling Idaho fruits are ample evidence of their high standing when compared with those fruits grown in all other sections of the country.

Having, as we believe, established our claim to the highest standard possible as a horticultural state, what then is necessary to secure the highest possible development along these lines? To this we reply, intelligent direction and honest endeavor. The horticulturist has no fear of counterfeits or adulterations. While there is a vast opportunity for the adulteration of the fruit products, the green fruit always speaks for itself. There can be no counterfeit of the highly colored, highly flavored and luscious apple, the king of fruits; there can be no counterfeit of the pear, the cherry or the grape, the peach, the prune or the plum, and there can be no counterfeit or adulteration of the large strawberry, the raspberry or the blackberry when offered fresh from the vine and the bush. With many of the manufactured fruit products the competition is so great that dishonest men have been tempted to adulterate with much cheaper products, and thereby reach trade that could not be otherwise obtained. The grower of the green fruit, however, is placed above all these temptations, and he can only succeed by

IRRIGATING A FIELD, PAYETTE VALLEY, IDAHO

producing that which presents the finest and most inviting appearance, and at the same time presents the finest flavor —and in securing such a product nothing but the most intelligent direction will prove available.

Thus it must be with the horticulturist of the future. For a long time in all our great cities the high class and fancy green fruits of every description have been on an increasing demand, and at no time has there been a sufficient quantity produced to satisfy that demand. This demand has increased at such a rapid rate that it is impossible to consider that the visible supply can keep within the demand. To illustrate: Something like two years ago our state was visited by an eminent horticulturist connected with the Department of Agriculture, and when examining and testing a very common sample of one of our Jonathan apples made the remark: "Never be afraid of over-stocking the market so long as you can raise and place upon it that kind of an apple."

And now, to be particular, if you should ask me what I mean by intelligent direction, when applied to the fruit business, I should say to you that it involved many questions.

1. It involves the selection of your site, or the location of your orchard.
2. It involves the selection of the varieties of the fruits you are to set out, whether the same be apples, pears, prunes or smaller fruits.
3. Extreme care in planting and pruning.
4. Continuous attention and care in cultivation and irrigation.
5. Care in protecting against frost when the trees are ready to fruit.
6. Care in thinning during growth in order to secure large fruit.
7. Care in spraying during the period when the tree is dormant to protect against insect pests; and
8. Care in spraying to resist the moth.

The selection of the site involves an examination of the soil and the existence of all the conditions necessary to warrant continuous growth. The site should be selected with reference to transportation facilities, if a commercial orchard is the aim and object of the grower. It should also be selected with reference to controlling the moisture by irrigation.

The selection of varieties I would consider of the next greatest importance. I would want to know first the varieties of apples that grow to the best advantage in the locality where the orchard was to be planted; I would want to select varieties that with proper handling and care would produce fruit every year, instead of alternating, as is the case with most of the Eastern fruits. But above all, I would select only those varieties which are demanded by the public and always meet with a ready sale when placed upon the market. If the varieties are selected with these three objects in view, no mistake can be made.

PLENTY OF IRRIGATING WATER. STREAM FEEDING SNAKE RIVER IN SOUTHERN IDAHO

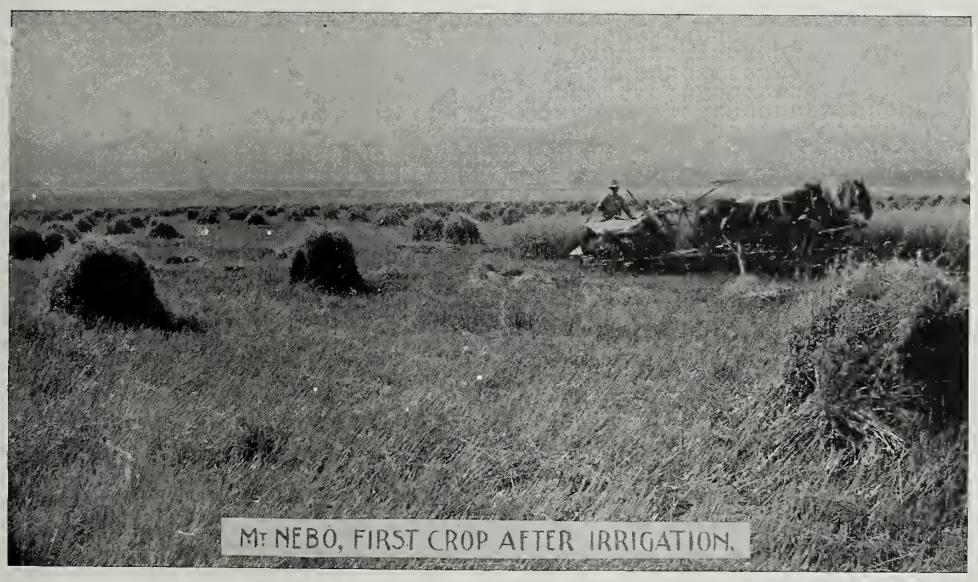
Care in planting and pruning is of great importance. The care given a tree at its start and during the early years of its growth is sure to count for much and aid in bringing the tree to maturity at a much earlier date. Pruning is an important matter to give the tree symmetry and uniformity and an equally balanced bearing surface when it is ready for the fruitage.

Care in cultivation and irrigation must be the watchword of the orchardist, whatever line of fruit he selects. If the land is properly fertilized there can be no such thing as over-doing the cultivation. Care in irrigation is essential,

POWER ENGINE INSTALLED ALONGSIDE THE GALLOWAY DITCH, WEISER, IDAHO
Two and three horsepowers are being installed along the canals of Southern Idaho irrigating systems

and this is something which can be overdone. While the fruit is maturing it is more liable to be injured by over irrigation than it is by failure to irrigate, if the land is properly cultivated. During the past year, on account of shortage of water, much valuable information has been obtained with reference to the irrigation of our fruits. It is generally conceded that the fruits shipped from this section of the state received much less water during the past irrigating season than they have received during former years, yet it is the universal opinion of the purchasers and handlers of that fruit that it was far better than ever before produced in Idaho. In this respect I hope you will permit me for a moment to digress a little for the purpose of giving you my own experience with reference to the subject. For several years my bearing apple orchard had a large supply of water for irrigation. During all of those years one of the largest fruit handlers of Chicago, the person to whom I sold, was urging me to use less water and more cultivation in maturing my fruit, but as long as the water was at hand my irrigator did not think the orchard was irrigated unless it was well covered with water a considerable part of the time. During the past year we were compelled to divide the water during the low-water period with the other canals. At a result, during practically all of the season, after the twenty-seventh of July, we were cut down first to thirty per cent. and then to twenty per cent. of our normal supply. As soon as I saw that this cut was inevitable I purchased an additional Acme harrow, making up my mind that I would substitute cultivation for irrigation. The result was that with an average of not exceeding ten inches of water I was enabled to irrigate forty-five acres of orchard, fifteen of which was young trees, after the twenty-seventh of July, and by the method of irrigation pursued I obtained the most satisfactory results, both in the growth of the young trees and the maturing of the fruit. Necessity, therefore, compelled me to try the experiment which the Eastern buyer had been urging upon me.

GRAPE VINEYARD AT LEWISTON, IDAHO, UNDER IRRIGATION



RESULT OF IRRIGATION, UTAH

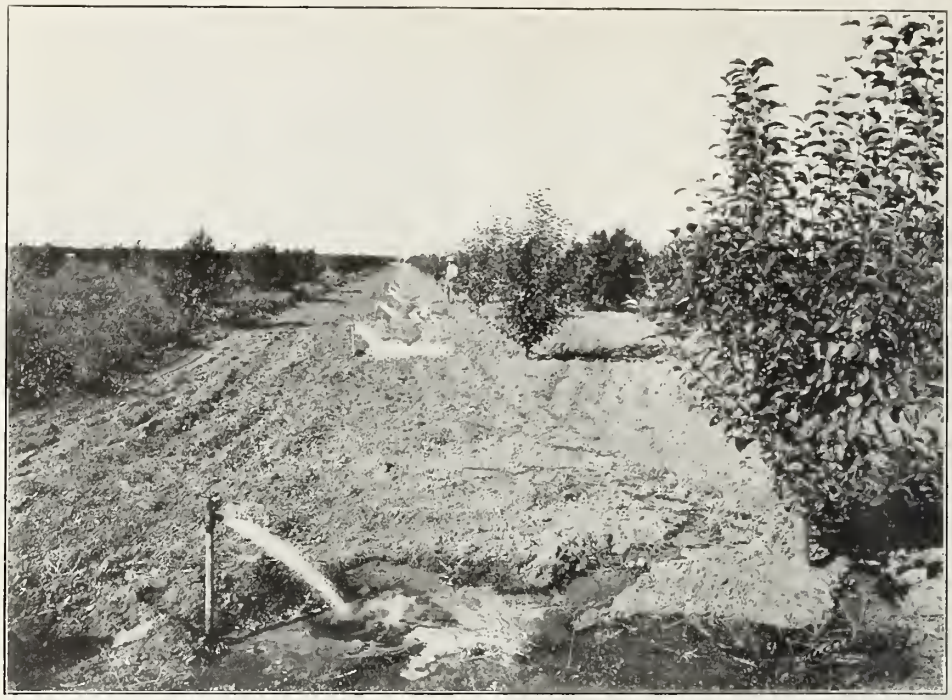
The results were so eminently satisfactory that, no matter what the water supply in the future, I shall insist upon less irrigation and more cultivation, because I find that it is far better for the growing tree and the maturing fruit. A considerable portion of the orchard, which was heavily set to fruit, received but one irrigation after the first of July. It was, however, continuously and thoroughly cultivated, and there never was a time but what the ground was moist within two inches of the surface. These are problems that must be worked out by individual experience, but when the demonstration is once made there is no reason why the rest of us should not profit therefrom.

The matter of protecting against frosts is in my opinion a matter of great importance. After an orchard has been so far developed that it commences to produce fruit, every reasonable effort should be exercised, every necessary expense incurred to protect and save the fruit from destruction. No temperate latitude can claim absolute immunity against frosts. Wherever the highest grades of apples, pears and other fruits are produced in the entire Northwest there are times between the bursting of the bud and the increased growth of the fruit when there may be more or less danger from spring frosts, but these conditions, if prepared for and intelli-

VALE OF CASHMERE, WASHINGTON, ALONG THE WENATCHEE RIVER

gently watched, can be overcome and resisted. In this and other countries much attention has already been given by investigations under the authority of the government of the necessity and methods for protection against frosts by smudging. That proper direction along these lines will accomplish its object at a small expense has already been again and again demonstrated, and, as a result of my experimenting along these lines I have no hesitation in saying to the inquirer or the prospective fruit grower that he need have no fear of the effectiveness of such attempt at protection, provided he will follow the lines laid down and watch over the weather conditions during the periods of danger.

The next subject which needs great care and attention is the proper thinning of the fruit. After the tree is matured it may be left to shift for itself and produce such fruit at the end of the season as the various insects and the elements may leave thereon, but if the tree is left to itself to produce its crop without any guidance or assistance the probabilities are that only a small percentage of the fruit will be marketable and that far less valuable than it would have been if greater care had been exercised therewith. There are many reasons why the larger fruits should be carefully thinned, and this in my opinion applies directly to the apple and the pear. In the first place each bearing tree should be allowed to produce only what fruit it can thoroughly mature to perfection, and that too, year in and year out. If a tree is permitted to carry a large amount of fruit, the result is that it is practically all necessarily small. The markets to which we must look in the future demand only large, well developed and matured fruit. To illustrate from my own experience during last fall, apples packed seventy-two and eighty-four to the box sold upon the car in New York for from $3.25 to $3.50 per box, while the same quality of apples, perfect in every way, yet packed about 160 to the box, sold for only $2.25 per box. This illustrates the condition of the market and shows how much better it would have been if the trees bearing the smaller apples had been thinned to such an extent that the increased weight would thereby have been given to the remaining fruit. Again, the thinning of the tree while growing is an absolute necessity and a protection against the codling moth. Wherever apples touch each other, or cluster, there, or in close proximity thereto, the egg will be laid and there the tiny worm, as soon as it hatches, will be enabled to secrete itself and protect itself against the most thorough and careful spraying, until it is enabled to make its entry into the fruit. The growers of certain valleys in Oregon have for years thinned their fruit wherever it has been clustered, even though the trees were otherwise light with fruit. But it is urged in reply that the expense is too great. To this I will answer that no expense is too great which obliterates the codling moth, increases the size of your fruit so that it reaches the very highest standard demanded by a critical purchasing public, and at the same time retains the tree in condition for annual fruitage.



UNIQUE WAY OF IRRIGATING IN THE LEWISTON, IDAHO, FRUIT COUNTRY
Showing method by which water is distributed to five-acre tracts in Lewiston orchards under the system of the Lewiston-Sweetser Irrigation Company. Delivered under fire pressure, the water is available both for irrigation and domestic use

CONCRETE DROP ON GUNNISON CANAL, COLORADO, GOVERNMENT PROJECT
The Gunnison tunnel in Colorado irrigates the Uncompahgre district, including Montrose, Olathe and Delta

In Idaho we are practically free from many of the diseases and growths that have proved serious embarrassments to the fruit produced in other states, but we have here the San Jose scale, the aphis and the codling moth, and unless their ravages are intelligently resisted but little can be made by the ordinary fruit grower. But we have already demonstrated again and again wherever the attempt has been made, that the San Jose scale is no longer to be dreaded, because we know it can be absolutely obliterated by proper spraying of the trees for a single season. By thorough spraying for the San Jose scale, while the tree is dormant, the

aphis is nearly obliterated with it, and by proper application of the arsenical sprays we know that the ravages of the codling moth may be resisted so that our loss from wormy fruit may be reduced to a very small minimum.

Intelligent direction will produce these results, but after the fruit is matured, in order to insure success, there must be an honest endeavor upon the part of the grower to place that fruit upon the market in the best possible form. And by this I mean that all fruit packed for sale should be selected only from perfect fruit, graded to size and color and packed by the best and most improved methods known to the packers of green fruits. In many localities the packing of the apple, the pear, the prune and smaller fruits has almost become a science, and so much fruit properly packed is now being offered upon the markets that the purchasing public has become critical and demands only the highest grades possible to secure.

Orange growers for many years have graded their oranges to size. This, however, has been an easy matter; on account of the toughness of the skin the orange is readily graded with machinery provided therefor. Such machinery, however, is not available for the apple and the pear. These fruits must be removed from the tree with the utmost care. They must be hand picked, every possible opportunity for bruising must be prevented, and no bruised or wormy fruit should, under any circumstances, ever be placed within the box. While it is impossible to grade apples and pears with machinery on account of the tenderness of the skin and the liability of bruising, it is, however, an easy matter for the packer to grade them and place only apples and pears of uniform size in each box. When the fruit is packed the box should be branded, not only with the name of the owner, but with the variety of fruit, giving the number of apples in each box, stating whether they are first or second grade or fancy or choice in selection, according to the method of packing adopted by the grower. But whatever method is adopted, every box must be branded true to name, true to quality, true to number.

WATER WHEEL RAISING WATER FROM GRAND VALLEY CANAL FOR ONE OF THE BEST PEACH ORCHARDS AT GRAND JUNCTION, COLORADO

STERLING FLUME (PATENTED) UNDER CONSTRUCTION IN PAYETTE VALLEY, IDAHO

We must all understand once for all that it is impossible to deceive in any manner the fruit buying public. They know an apple or a pear, a peach, a prune, a cherry or a berry when they see it, and whenever an unwise grower brands an apple otherwise than true to name, he is doing an injury and injustice to himself which will be difficult for him to overcome by a long period of more correct dealing. If the fruit man grows and sells Ben Davis apples, he must place them upon the market as such, no matter what the reputation of the apple may be in the locality where it is offered. The pear and the prune should be branded as true to name as the apple. Wherever the reputation of the grower is once established for correct dealing in all of these lines his brand will sell itself at the highest figures obtainable. In these lines honesty is not only the best policy, but it is a case where it pays to be honest.

It is difficult for the average grower to go into his orchard in the latter part of June and pull off one-half or two-thirds of the growing fruit, but if he will once make the experiment, he will find that he will raise more pounds of fruit upon his tree, that a larger percentage of it will pack as a fancy product, and that his net returns will be increased two or three times beyond

the returns received where the tree is left to the ordinary course of nature.

Some one may suggest that in dealing with this question I have simply been laying down rules for the commercial orchardist, but whatever applies to the setting and care of a commercial orchard and the harvesting of its fruit, applies with equal force to the ordinary farm orchard.

If an ordinary farm orchard be given the same care and the same attention that we contend should be given to the commercial orchard, every acre of the farm orchard will produce a net return to the owner greater than any three acres of his land devoted to ordinary agricultural products.

The question is asked how are these problems to be worked out, how is all the information to be obtained necessary for the setting and development, the care and protection of the orchard? How is the owner to determine when to smudge and when to spray, when to spray for the codling moth, when for fungus diseases, when for aphis, when for the scale? My reply to this question is that these problems have all been worked out by the investigations and demonstrations that have already been made. The government, through its weather bureau service, may be placed by telephone, in connection with every orchardist so that the grower may know in advance when the frost danger is approaching. For years state and national governments have been expending millions annually in solving and teaching problems involving the farm and orchard and in promulgating the results of those investigations.

TWIN FALLS, IDAHO, SOUTH SIDE CANAL

Those things have already been determined in the schools and the results of the investigations are available to everyone desiring to adopt the information thereby obtained.

THINNING APPLES IN IDAHO. PHOTO TAKEN JULY, 1909, IN DORMAN APPLE ORCHARD, CALDWELL, IDAHO

PUMPING OF WATER FOR IRRIGATING PURPOSES

ADDRESS BY R. H. THOMSON, CITY ENGINEER, SEATTLE, AT NATIONAL IRRIGATION CONGRESS, SPOKANE, AUGUST, 1909

IRRIGATION as an aid to agriculture, has been practiced from the earliest times. Pumping for irrigation has been praticed for many centuries, but, until recently, upon a very small scale, because of the lack of mechanical devices for economically raising water to great heights. In recent days, man has undertaken, by the use of water delivered from pumps, to reclaim lands lying at high elevations above the water supply, and which, from the beginning of time, had been desert and waste. In many places pumps have been installed as an aid to gravity irrigation, being used when the heighth of the water was not sufficient to fill the canals. In these cases the lift has been very small. More recently, pumps have been installed for the purpose of removing the drainage water, attention to which has become more and more a recognized necessity throughout the entire world.

Some of the earlier installations for pumping for irrigation were made in upper Egypt, where, at the present time, we are informed by Brown, there are some two hundred pumps operated under private enterprise by engines of an aggregate horsepower of five thousand. These have a maximum lift of about thirty-three feet, and, in connection with the cultivation of sugar-cane, are supposed to be profitable when using coal at $10 per ton. The same authority tells us that an interesting venture has recently been undertaken to irrigate the Komombos Plain in upper Egypt. This is a very productive soil, lying about sixty-five feet above the summer level of the Nile. It is expected here, that three pumps of thirteen hundred horsepower will lift a sufficient amount of water a height of seventy-eight feet for the irrigation of about 20,000 acres of land, the coal at $14 per ton. Whilst an elevation of seventy-eight feet seems appalling to a conservative European, our brothers in Hawaii do much irrigating with water lifted to heights of 300 feet, and, in some instances, the lift is as much as 450 feet, although Mr. Dove says that local conditions preclude profitable pumping above 400 feet. As in the case of the higher pumping in Egypt, these high lifts in Hawaii are for the irrigation of sugar-cane.

SCENE ALONG IRRIGATION CANAL, SOUTHERN IDAHO

In the State of Washington, some pumping is carried on against a head of 275 feet. It is no longer a question as to whether water can be raised high enough to cover the vast expanse of arid lands lying in several of the Western states, but whether it can be raised economically enough to make the investment profitable. As in every other line of business, the investigator will discover that there are very few persons who actually know what their work costs them. In attempting to prepare this paper, I have spent a great deal of time in an attempt to obtain accurate information as to the cost of pumping to different elevations for the irrigation of various crops in a number of places. The information derived from the great majority of persons communicated with, was worthless.

Charles V. Dove has kindly furnished some specific information concerning results in Hawaii. W. J. Woodward has furnished data from the San Joaquin, and several persons have furnished partial data for places in the State of Washington, which I take pleasure in presenting. From the data given, persons studying this question will be able to form a very fair idea of the results obtainable by the use of pumps. I have deliberately laid aside an immense amount of theoretical matter, to make room for these concrete examples, as I believe that they would be far the more helpful.

In Hawaii, large units have been installed and irrigation is carried on in a strictly wholesale manner, Mr. Dove reporting that the total pumping capacity of the islands, used for irrigation, is about six hundred million gallons per day. This is equivalent to eighty millions cubic feet, or about 1,836 acre feet per day — certainly an enormous volume of water.

VIEWS OF WHITE SALMON RIVER, WHITE SALMON VALLEY WASHINGTON

He informs us that experience with the direct-acting, slow-moving pump has not been encouraging. He says:

"The pumps used may be divided into three classes: Impeller pumps, such as the centrifugal and rotary types; Multivalve pumps, in which the valves are operated by water pressure; and pumps having the valves mechanically operated, such as the Reidler pump; the motive power being supplied, in most cases, by two, three and four cylinder engines of the Corliss type.

Centrifugal pumps have been found to work against a fifty-foot head with from forty-five to fifty-five per cent efficiency; Impeller pumps or Rotary pumps from sixty to seventy-five per cent; Multivalve pumps from seventy-five to eighty-five per cent, and mechanically operated pumps, from eighty-five to ninety per cent.

In one case, where a test of the mechanical efficiency was made by J. N. S. Williams of a Reidler, triple expansion pumping engine, water was delivered at an elevation of 375 feet above the level of the water in the pump at the rate of 10,000,000 gallons per twenty-four hours and the water measured at the weir showed an efficiency of 91.85 per cent. This test was undertaken to determine the amount of slip in the pump, which, in this case, amounted to only one-fourth of one per cent.

LARGE LEATHER BAG WELL IN INDIA

Comparative Cost

Coal costs from $7.00 to $9.00 a ton, while California oil at $1.50 a barrel of 42 gallons, has been found to be about equal in cost to coal at $6.00 a ton; but on account of its greater cleanliness and the ease in handling it, its economy is marked. A coal plant requiring ten men to operate, can easily be handled by two men when oil is substituted.

With the oil burners in use, six pounds of oil (18 Beaume, minus scale) have been found equal to ten pounds of ordinary coal.

Figures of cost determined by Mr. Williams for pumping with the Reidler triple expansion pumping plant, mentioned above, are as follows.

Using crude oil for fuel, steam pressure 180 pounds, revolutions per minute 54, delivery in twenty-four hours at this speed, nine million gallons:

Elevation of Delivery	*Cost per Million Gallons*	*Per Thousand Cubic Feet, "Equated"*
100	$ 7.85	$0.059
200	11.57	.087
225	12.50	.094
250	13.44	.10
300	15.30	.115
350	17.17	.129

These figures include superintendence, labor, fuel, supplies and repairs during one year of 240 pumping days. The comparative economy of such a plant is high; one horsepower being produced by the consumption of 1.12 pounds of oil per hour, which, if six pounds of oil equal ten pounds of coal in ordinary work, is equivalent to 1.87 pounds of ordinary coal per horsepower hour.

The costs above given are probably as low as have been, or for some time to come, will be, the cost of pumping anywhere in this country, so that we may take them as being the minmum cost of pumping with steam for irrigation under present conditions, with the possibility of the cost being considerably increased under unfavorable conditions. Especial attention is directed to the fact that nothing is included for either interest on investment or sinking fund, in the above schedule. Reducing these costs to acre feet (disregarding

SUNNYSIDE NURSERY COMPANY

This cut shows a block of yearling Spitzenbergs, with W. S. McClain in the foreground. On account of the increasing business this company is compelled to increase their capital stock to $100,000, lease extra ground in addition to their holdings. They expect to market 3,000,000 trees during the coming season

fractional portions of a cent) we have the following table:

Elevation of Delivery	*Cost per Acre Foot*
100	$2.57
200	3.79
225	4.10
250	4.36
300	5.10
350	5.62

I have attempted to collaborate the reports made to me from a number of small irrigation plants along the Columbia River. The results of the study of these reports may perhaps be best set forth with what seems to be the actual cost, as near as may be, of a typical pumping plant of 250 horsepower, the proprietors of which affirm that it will be necessary to operate but one hundred days, and to provide but one and one-half acre feet per year. The results are as follows:

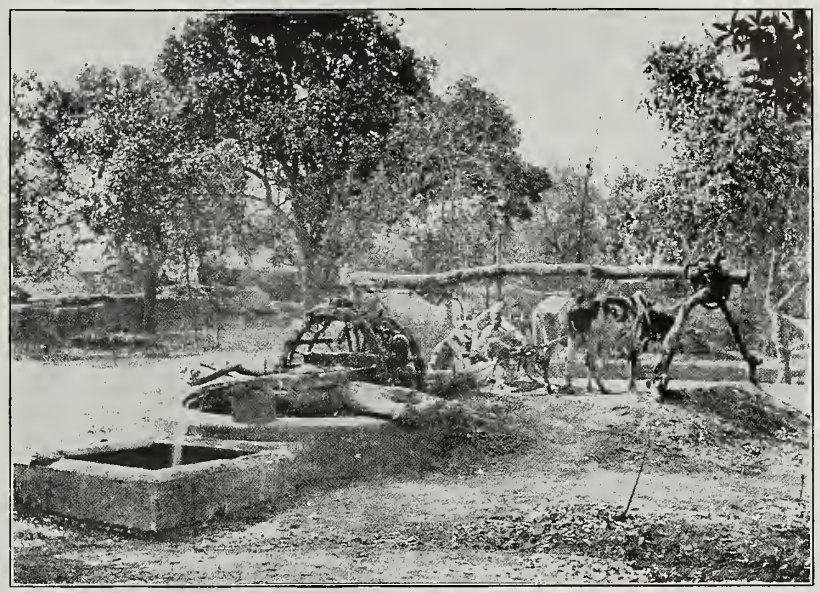
Cost of pump and outfit for 1,250 acres	$50.000.00
Cost of coal, as used at present, per ton	10.00
Consumption, 2 pounds per horsepower.	
Hours operated per day, 18.	
Wages paid to pump men, per day	12.00
Average cost for incidentals, repairs, etc., per day	3.45

Totaling this as a financial proposition, we have:

Interest and taxes on $50,000 installation at 7 per cent	$3,500.00
Annual depreciation, 8 per cent	4,000.00
Four and one-half tons of coal per day for 100 days	4,500.00
Wages, 100 days at $12 per day	1,200.00
Incidentals	345.00
Total	$13,545.00

Acreage served, 1,250.
Cost per acre, per year of 100 days, $10.83.
Height of lift, 65 feet.

It is expected that next year, coal will be had at $5.00 per ton, in which case, the cost would be $9.03 per acre year. It is claimed, however, that one hundred days pumping cannot possibly supply this land, but that the number of days must be increased to 150. If so, the cost per acre year, with coal at $5.00 per ton, using improved machinery, demanding but one and one-half pounds per horsepower hour (which class of machinery will be installed if 150 days pumping per year is demanded) will make the cost practically $10 per acre per year.



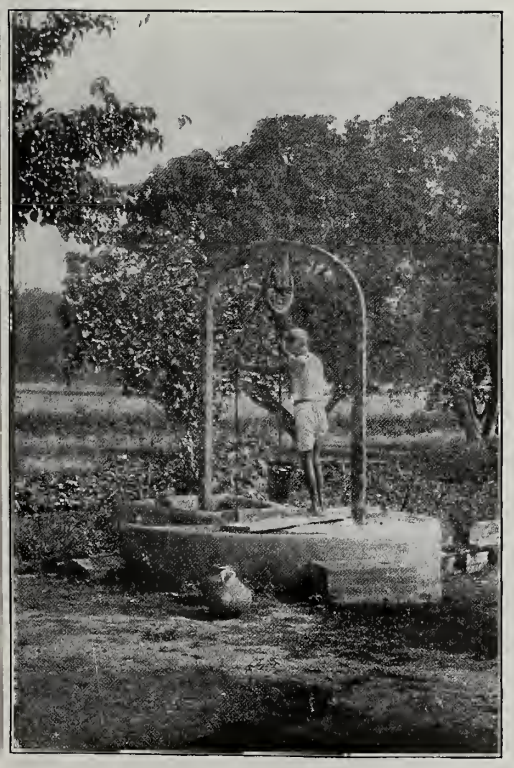
PERSIAN WHEEL WELL

For the purpose of comparing costs of small pumping plants, let us turn to California. In the San Joaquin Valley, irrigation has been practiced for many years, and there exist a great many small pumping plants, lifting water from twenty-five to thirty feet. The irrigated crops are principally alfalfa, melons and corn. Owing to the long season, from five to seven crops of alfalfa, with a total of from seven to twelve tons dry hay per acre per year, can be counted on when there is a sufficient supply of water. So far as can be ascertained, alfalfa requires from three to six acre feet per year, depending upon the character of the soil and the condition of the land. In this valley, it is expected that the first crop will grow without irrigation. The record given by W. J. Woodward for a specific plant in that valley, is as follows:

"In irrigating my sixty acres of alfalfa, the plant is operated seventy-five to ninety days of each season. About sixty acres of other crops are irrigated between the waterings of alfalfa. It will be understood that with pump irrigation with a plant of moderate size, on account of the comparatively small acreage that can be irrigated per day there is a period during the growth of the alfalfa crop when water comes too late to benefit the growing crop and too early to be of much benefit to the future crop, so that the acreage of alfalfa that can be profitably grown is limited to the amount that can be irrigated during one-half of the growing period of the crop, or say, fifteen to twenty days. There is, therefore, a period of ten to fifteen days between the irrigations of alfalfa when the water can be used profitably for other crops.

"Our water supply is from what are called non-flowing artesian wells. The water stands at a depth of from eight to fifteen feet below the surface, according to the elevation of the land. The water bearing gravels are in successive stratas, from a few inches to five or six feet in thickness, ranging from ten to thirty feet apart in depth. My pump is supplied from four twelve-inch tubular wells, bored in a line twenty feet apart, ranging in depth from sixty-one to 106 feet. Each well is ended in a different gravel stratum. The twelve-inch, No. 14 gauge black steel rivet, single collar casing is bedded in the clay, directly above the stratum of gravel in each well.

To be concluded in December edition



COMMON BUCKET WELL IN INDIA

BALANCE BUCKET WELL, INDIA

"THE CALL OF THE WEST" BY GOVERNOR JOHNSON

THIS article, "The Call of the West," by the late Governor John A. Johnson of Minnesota, appeared in the World's Work, published in New York City, and is copyrighted. "Better Fruit" was granted special permission to publish the parts of the article, which appear in this issue. People interested in the subject would do well to get the October edition of World's Work, and read the entire article. We regret our space is limited and we beg leave to say to the readers of "Better Fruit" that the World's Work is one of the best magazines published in America, and we feel justified in advising our readers to subscribe for the World's Work.—Ed.

The call of the West is for development. It is the call of the race to the vanguard of progress.

* * * * * * *

The West—what a heritage the word implies! Here is the best blood of New England, of the Middle States, and of the South. Here are the sons and daughters of the Revolution and of the wars for human freedom. Here, too, have come the sturdy sons of northern Europe, toilers of the workshop and plow, descendants of the hardy Germanic races who cradled modern democracy in the forests of the North Sea and the Danube, or brothers of those who still fight for home rule for Ireland. In short, the God of American destiny has by selective process visited the best races and the best states and countries of the earth, and wherever He could find souls filled with courage and self-reliance, hearts yearning for freedom and a home, hands eager for hard work, eyes open to opportunity, and shoulders prepared for responsibility.

* * * * * * *

Today, the West produces two-thirds of the grain crop of the United States; enough to feed not only its own population but a large part of the East, and to have a vast surplus for export. The income of the West from this season's grain crop alone exceeds the total income credited by Mulhall to Great Britain for the year 1822 from all industrial resources combined.

The states which produce the lion's share of this great farm income today are embraced in what the school geographies of only a half century ago pictured as the "Great American Desert." One of the chief problems of the geographer of today is to find that desert. Once it was supposed to extend from Minnesota to Texas. * * * At length, the "Great American Desert" was driven west of the Missouri, then across the Rockies, and finally, about twenty years ago, was lost in the valleys and foothills which are now producing on each irrigated acre $50 to $100 of alfalfa, $100 to $500 worth of melons and celery, and $500 to $1,000 worth of apples, peaches, berries, and grapes. Today the states of that great mythical desert and of the Pacific Slope beyond produce 500,000,000 pounds of butter, fruit for the greater part of the United States and Canada, the great bulk of the breadstuffs and meat products for Eastern supply and for export, and a total value of agricultural products equal to that of the entire United States in 1880.

SNYDER & STACEY ORCHARD, WEISER VALLEY, IDAHO, SHOWING THE SPLENDID SYSTEM OF IRRIGATION

The so-called "Oregon Country"—which comprised the territory from which were carved the states of Washington, Oregon and Idaho — was denounced by a United States senator in 1843 as not worth a pinch of snuff. The 1904 census valuation of these three states was approximately $2,200,000,000. Their railroads, street railways, telegraph, telephone, water works, shipping, and canal improvements were valued at $440,000,000. Their farm and mill machinery and tools were valued at $80,000,000, and their live stock at $100,000,000. They have today more than 1,500,000 resourceful people on 150,000,000 acres of the most resourceful soil in the world. Their grain crop exceeds 100,000,000 bushels. They raise in a year 30,000,000 pounds of wool, 40,000,000 pounds of hops, and have in bearing more than 10,000,000 vines and fruit trees. They have the greatest wealth in standing timber of any section of the United States, and their annual lumber cut approximates eight billion feet. Their mineral product of coal, copper,

IRRIGATING PRUNE ORCHARD, ROSWELL, IDAHO

lead, and silver is valued at $20,000,000 a year. Their manufactured products total $200,000,000, and they have a $100,000,000 foreign trade.

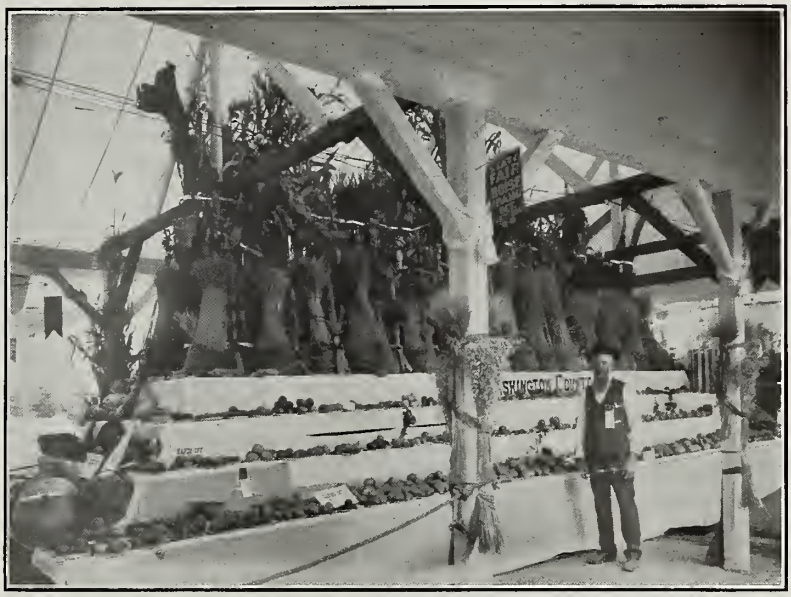
* * * * * * *

The states and territories west of the Mississippi River today embrace more than 60 per cent of the area of the United States, and have a population of close upon 30,000,000 people, or about that of England or Italy, and three-fourths that of Prussia or France.

In this great Western domain, where the ignorance of fifty years ago established a desert, there are today approximately 500,000,000 improved farm acres, or one-half of the cultivated area of the United States. With stock and improvements, this great Western farm plant is valued at something like $10,000,000,000, which is one-half greater than the total estimated wealth of the United States in 1850.

According to the official estimates of the United States Census Bureau, as published in the census report of 1905, the states and territories west of the Mississippi possessed and employed in their great industrial and commercial operations in 1904 railroads and equipment valued at $3,000,000,000, street railways, telephones, telegraphs, shipping, and water works valued at $1,000,000,000; live stock valued at more than $2,000,000,000; farm and factory machinery, tools, and implements valued at $1,000,000,000; and in gold and silver coin and bullion held in their bank reserves specie to the amount of $500,000,000.

The real property and improvements, including the homes, farms and business blocks owned by the 30,000,000 people in these Western states and territories in 1904 exceeded the total estimated wealth of the United States in 1860; while the aggregate wealth for 1904 of the country west of the Mississippi, from all sources, representing the developed capital of barely one generation, was only a little less than the total wealth of the United States in 1870.



WASHINGTON COUNTY FAIR EXHIBIT, WEISER, IDAHO

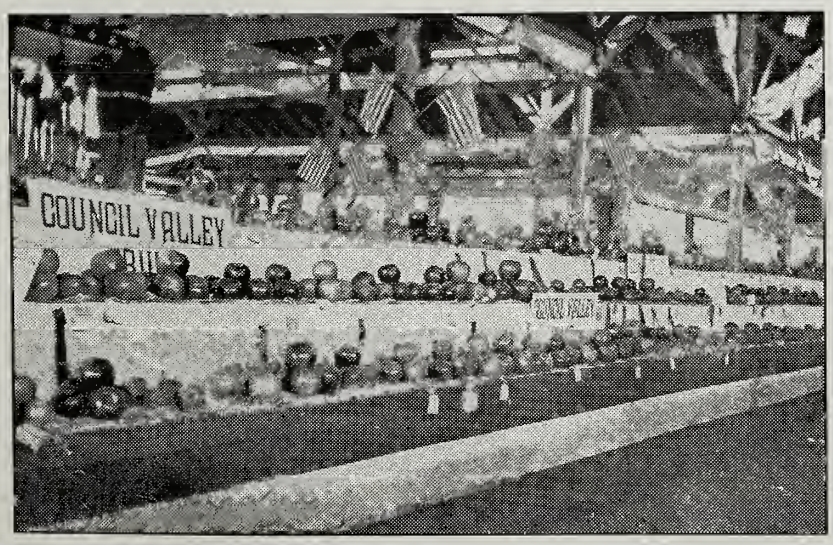
What would the statesmen of 1803, who opposed the Louisiana purchase for a paltry $15,000,000, or those of 1840, who considered the Oregon country of no value, or those of 1867, who doubted the wisdom of acquiring Alaska—what would they think were they confronted in their graves by the recording angel with a financial statement of the wealth of the West for 1909? What would they think of the proposition that, scarcely a century after Jefferson's purchase, the wealth of the western half of the United States equals two-thirds that of France or of Germany, nearly the total wealth of Russia, and approximately that of Italy and Austro-Hungary combined?

It produces two-thirds of the grain of the United States, including the entire surplus of breadstuffs which we export for European supply. It owns 55 per cent of the live stock of the United States, its value being much greater than the probable total wealth of the United States at the time Josiah Quincy objected to the admission of Louisiana on the ground that it was on the wrong side of the Mississippi River, and even greater than the total agricultural wealth of the United States in 1840, when the Oregon country was valued in the United States senate at the price of a pinch of snuff.

The West not only has the great unimproved area of the United States awaiting settlers, but it also has one-half of the entire improved farm acreage, both in number of acres and in value, and its farms this season are estimated to produce a three-billion-dollar crop, which exceeds one-half of the country's total agricultural product. The product marketed by the farmers of the twenty-three Western states and territories in one year equals nearly one-half of the total estimated gold stock in the bank and treasury reserves and in the monetary circulation of the world, the product of the mints and accumulation of the financiers of the centuries.

The West, besides its vast product of the farms, mines and forests, has advanced rapidly in manufactures. If we include with the territory west of the Mississippi the states of Wisconsin and Illinois, which largely use Western materials and sell their goods to Western consumers, the manufacturing industries of the West in 1904 represented an invested capital of $3,200,000,000, gave employment to 1,400,000 wage-earners, and turned out a manufactured product valued at $4,200,000,000. This approximately equals the entire manufacturing development of the United States in 1870. Moreover, the West's manufactured product in 1904 exceeded in value that of France, was 90 per cent that of Germany, and 80 per cent that of the United Kingdom. In the manufacture of the great staple necessities—cereal products, meat products, and lumber—the West is the chief potential reliance of

Continued on page 54



FRUIT EXHIBIT OF COUNCIL, IDAHO, AT WASHINGTON COUNTY FAIR WEISER, IDAHO

BOISE

Money can't talk when it is a question of Fruit. Quality is the whole thing. It is QUALITY first, QUALITY last and QUALITY all the time. There is only one reason why the Boise Valley orchardist is growing rich while his Eastern brother is plodding along—

QUALITY

Boise Valley apples have the quality. They are large, smooth and well proportioned; brightly, even vividly colored; without worm holes, blemishes or bruises; luscious, sweet and healthful, they tempt the eye and the appetite, and sell for five cents apiece in New York when other apples are left to rot on the ground under the trees that bore them.

What Makes It?

SUNSHINE, IRRIGATION, SOIL, SCIENTIFIC ORCHARDING

Nine solid months of almost uninterrupted sunshine, water when the trees need it, a soil of decomposed lava ash, the richest known to man, and the application of the many little helps which science has supplied to the orchardist. These are the manufacturers of Boise Quality, and on these the Boise Valley, during thirty years of successful fruit growing, has demonstrated it superiority.

WRITE TO REILLY ATKINSON, SECRETARY OF BOISE COMMERCIAL CLUB, FOR FREE VIEWS AND INFORMATION

Boise Quality fruit land sells for one-third less than land "just as good" in other states.

Because of its wonderful fruit-growing value the United States government is spending ten million dollars for the construction of a project to irrigate the Boise Valley.

QUALITY

WRITE TODAY FOR INFORMATION

Thinning Fruit, Dorman Orchard, August, 1909

PRIZE WINNING
Canyon County Orchard Lands

You can realize large profits on an investment in orchard land near Caldwell. Buy while prices are low. One year hence will see values doubled.

Seven out of eight first prizes awarded Caldwell apples by National Horticultural Congress at Council Bluffs, Iowa. December, 1908, in competition with the world.

PRICES ARE RIGHT

Sample listing: 708—40 acres, near Caldwell; established road; fine laying land, northeast slope, and choice sandy loam soil; 20 acres yearling apple trees (Jonathan, Gano and Winesap); 20 acres plowed land; abundance of water at small cost. Price $4,800. Terms.

CLIMATIC CONDITIONS UNSURPASSED

INQUIRY SOLICITED

THE A. L. MURPHY COMPANY

CALDWELL, IDAHO

BOISE VALLEY

IN

SUNNY SOUTHERN IDAHO

Is the **Greatest Fruit Area.** For **Color, Quality, Yield** and **Extent** it is **Unexcelled.** Choice lands with splendid air and water drainage, on Orchard Ridge, under the **United States Reclamation Service Irrigation System,** at from $50 to $75. On the main line of the Union Pacific Railway.

D. R. Hubbard & Co. Boise, Idaho

Homeseekers and Investors this is Your Opportunity

THE LAND OF WEALTH AND SUNSHINE, THE BIG RED AND YELLOW APPLES, PRODUCTIVE FARMS, RICH STOCK RANCHES, AND SPLENDID TIMBER SECTIONS

THE FAMOUS GRANDE RONDE VALLEY

La Grande, county seat of Union County, Oregon. This county is famous for its fine fruits, its splendid farms and its lumber and grain output. On the main line of the O. R. & N. We have a fine list of properties.

Irrigated lands under the U. S. Reclamation Service, in Umatilla County, at Hermiston, Oregon. Best rail and water transportation. A quick and profitable market is certain for all products. This country is the bread-basket of America. Come and investigate. Tracts large and small.

LOGAN-SHERWOOD REALTY CO.

LA GRANDE, OREGON HERMISTON, OREGON

"CALL OF THE WEST"

Continued from page 51

the country, and likewise contributes a large surplus for export; and it is forging to the front in manufactures of agricultural implements, clothing, furniture, paper, cordage, leather goods, vehicles, vessels, iron and steel, and all classes of food products.

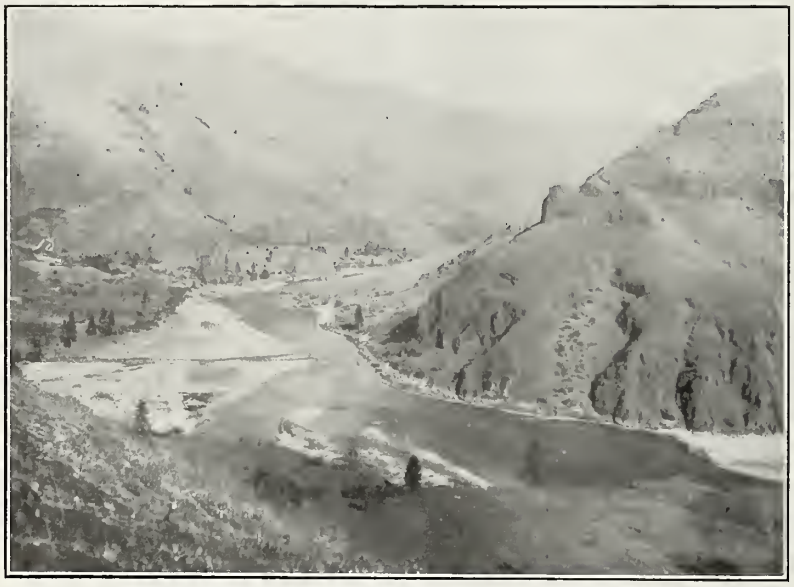
The West produces 99 per cent of the gold and silver of the United States. The flood of precious metal which for sixty years has poured into our treasuries from the West has given the United States bank and treasury reserves the greatest stock of gold in the world, besides a large surplus to replenish the European reserves. The gold and silver product of the West since 1849 equals approximately 40 per cent of the current gold and silver money of the world. How great a factor in maintaining the monetary systems of five continents, therefore, becomes the mining industry of the Rockies and the Pacific!

* * * * * * *

To obtain a fair idea of the present rate of development in the West, take a territory like that which stretches from Lake Superior to Puget Sound. It embraces the seven states of Minnesota, North and South Dakota, Montana, Idaho, Oregon and Washington. In 1870 these seven Northwestern states had 600,000 people. In 1880 this doubled to 1,200,000. In 1890 the population doubled again to 2,600,00. 1900 there was an additional growth of 1,200,000, bringing the total to 3,800,000. The government estimate of 1904 was 4,300,000, and the estimate of the governors of the respective states for 1909 was 5,800,000. In other words, the span of a single generation adds 5,000,000 people; and since 1890 the population growth is more than 3,000,000, or 120 per cent.

The nearly 6,000,000 people of these seven states occupy an aggregate area of nearly 400,000,000 acres, or double the area of the combined New England and Middle States. Nearly 100,000,000 acres, or one-fourth of the total area of these seven Northwestern States, is public land, most of it subject to homestead entry. Yet witness the vast developments! Railroad mileage of 27,000 miles of main track, exceeding that of New England, New York, and Pennsylvania combined; railroad and other public service corporation improvements valued at nearly $1,500,000,000; farm and city realty valued at $4,300,000,000; live stock worth $430,000,000, and machinery, $200,000,000; bank resources, exceeding $750,000,000; manufactured products in 1904, $590,000,000; an attendance of 1,100,000 pupils in common schools, or 21 per cent of the total population; bank clearings in the ten clearing-house cities of the Northwest already in excess of $3,000,000,000 a year, and a total property valuation estimated by the United States Census Bureau in 1905 at $7,750,000,000, which exceeds the total estimated wealth of the United States in 1850.

The total farm product of the 50,000,000 acres already under cultivation in these seven states of the Northwest will probably exceed this year $800,000,000, and it will take more than one-fourth of all the money in the United States to pay for it. Is it any wonder, then, that the Northwest today, instead of depending upon the East for capital for development, is assisting to finance the East by investing in 4 and 5 per cent Eastern commercial paper?



OX BOW, A BEAUTIFUL MOUNTAINOUS SECTION IN SOUTHERN IDAHO

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And now the call of the West is the call of the future. The years that are opening are all our own. They are a virgin page and we can inscribe them as we will. The future of our country and the happiness of posterity depend upon us. Generations of men shall come and go, and the glories of this noon vanish before tomorrow's sun, yet the West—the Mecca of the free, the brave, the patriotic American—shall not only endure while the spirit of the pioneers animates their sons, but will bear nobly its part in the struggle for better social and economic conditions, in the mastery of the elements and in the evolution of the ages. We have reason to hope in the future, as in the past, that the West will be true to its traditions, and that to the remotest generation liberty will be as sweet and progress as glorious as they were to our fathers.

A FEW GLIMPSES OF SNAKE RIVER CANYON, SOUTHERN IDAHO

THE National Horticultural Congress, which is to be held at Council Bluffs, Iowa, November 15 to 20, 1909, is not a mere fruit and vegetable show—it is an important national educational enterprise in the interest of horticulture in its largest sense. It was a grand success last year.

THE PRUNE GROWING INDUSTRY IN IDAHO

BY JOHN STEEL, ROSWELL, IDAHO

YOU ask me for a statement about prunes from the standpoint of a grower and investor. Briefly, will say I have forty acres at Roswell, in Canyon County, on which there are 4,000 trees, only 3,500 in bearing, as I changed 500 for a better variety. Nearly all my trees are now of the "Italian" variety. They were planted in 1897 and 1898, and commenced bearing a little at the fourth year after planting, but did not produce in paying quantities till the trees were six years old. Since then I have each year had an increasing amount over the preceding year, and the trees are not full grown yet. This year, 1908, with the trees ten and eleven years old, I had approximately 900,000 pounds of fresh fruit, of which I shipped nineteen carloads of the ripe fruit to the Eastern markets. They are put up in basket crates and 1,000 crates to the carload. At this writing I have not complete returns on sales, but they will average nearly the same as in former years, or about one cent a pound net, after all expenses for freight, for boxes, packing and hauling are paid. In other words, while a carload of 26,000 pounds of fruit will sell in Eastern cities at from $800 to $1,200, the net results to me has been around $260 a car, or one cent a pound for the fruit, and if sold for less than that it will pay better to evaporate them and sell the dried prunes at four and a half to five and a half cents a pound. It will require three pounds of fresh fruit to make one pound of dried. The expense of taking the fruit from the orchard, running it through the dryer, and packing in boxes, runs about $1.75 per 100 hundred pounds of the dried fruit, including boxes. During the fruit picking season a large number of people are employed. Men, women and boys and girls come from all directions, many bringing tents and camp outfits. They consider it good recreation and also they earn good money, as picking and packing is all done by piece work. Men and boys do the picking and get eight cents per orchard box of sixty pounds, and earn from $2.00 to $4.50 per day, according to experience and ability to work fast. Women and girls do the packing and are paid one cent a basket or four cents per crate, and usually earn between $1.50 and $2.50 a day, averaging about $1.75 each. The season for picking and shipping fresh, commences in our locality, September 5 to 10 and lasts three or four weeks. By that time the fruit is too ripe for shipping fresh, and evaporating commences. As I have both evaporator and packing house, I have facilities for shipping fresh or evaporating, regulated largely by the state of the market on fresh fruit. Farmers who have small patches of prunes without facilities for shipping or drying can always sell their fruit, delivered at packing house, for $15 a ton or three-quarters of a cent a pound. In fact, I was offered three-quarters of a cent a pound for my entire crop this year at the orchard, which, after paying for the expenses of picking, would have netted me over $4,500 for the fruit grown on thirty-five acres. But I will do better than that because of having facilities for handling it myself in carload lots.

"SEVEN DEVILS" DISTRICT, SOUTHERN IDAHO

For commercial purposes, the Italian prune is by far the best. The tree is healthy and vigorous, does not need spraying unless one be afflicted with scales, which are easily combated. It does not require thinning of the fruit as some other varieties do, as it sheds on its own account the excess or amount it can't carry, and the branches never break from over-bearing, like apples and pears do, as well as Hungarian and some other varieties of prunes. How long trees will last in the Boise Valley is unknown. There are trees over forty years old and still vigorous and healthy.

I have traveled about a good deal and carefully investigated the quality of fruit, soil, climatic conditions, etc., in other much advertised fruit countries, such as Hood River, Yakima, and other points in Oregon and Washington, and am convinced we can raise as good fruit both in quantity, quality and color in Southwestern Idaho, below the 2,400 foot elevation, as anywhere in Oregon or Washington, and in some of those older and better advertised countries, raw fruit land sells at $200 to $300 an acre and bearing orchards at from $500 to $2,000 an acre.

In conclusion, let me say, no one should go into the fruit business as a commercial proposition unless they have the inclination and ability to give the orchard proper care as to cultivation, spraying, pruning, etc. But with such care, an orchard eight or more years old will pay good interest on $1,000 per acre.

STREET SCENE, WEISER, IDAHO

THE SUTHERLIN VALLEY IRRIGATING PROJECT

WE herewith give a description of the Luse Land and Development Company (Limited) project in the Sutherlin Valley, Oregon. This project will be of special interest to all, as it is the largest and most modern project in the Northwest.

The gentlemen at the head and in control of the Luse Land and Development Company (Limited) are practical orchardists, having had years of experience in this class of work, and two of the company have been long residents on the west coast of Oregon.

These gentlemen investigated carefully, with the assistance of land experts, every fruit district in the State of Oregon, favorable to an investment of this nature. After carefully considering all of these districts from every possible standpoint, The Sutherlin Valley, Douglas County, Oregon, was selected as the finest tract, in the best fruit belt, in the leading fruit state of the Union.

The company is cutting this land up into small tracts for the farmer or investor from the other parts of the country, who, having heard through various channels the wonderful reputation now enjoyed by Oregon as a fruit-producing state, have decided to come to Oregon in the near future for location and investment.

The Sutherlin tract of land is about fifteen miles north of Roseburg, and one hundred and eighty-five miles south of Portland; has a length of about eight miles and average width of about two miles. The company's land lies on both sides of the Southern Pacific Railroad, and a town known as Sutherlin has been established. A large hotel is in full operation, which is modern in every particular, having rooms with bath, hot and cold water, saying nothing of the broad, spacious veranda. A concrete depot of modern style of architecture, strictly up-to-date and modern, has been erected. Postoffice accommodations established, and other features are rapidly being developed.

The school, the church, the shopping, the shipping and market facilities are all that could be asked. They already have installed and in operation their electric light and power plant, and the water supply system and the sewer system for the town will be as modern as that in any city.

The land that the Luse Land and Development Company is offering is fruit land of the very best quality. It is already cleared and under cultivation. The valley as a whole is exceptionally pleasing to the eye, and the other conditions, such as climate, etc., are as near perfect as can be found. It can be honestly stated that Sutherlin and the Sutherlin Valley in all its details is an ideal location from every standpoint. Those that are now located there substantiate this. The effort of the company is not to sell at a distance. They want everyone to see their property. So that a trial trip to Sutherlin can be conveniently made by those far East, the company is operating three private cars, and by taking part in their excursions the trip is made one of joy and comfort. They simply ask prospective settlers to examine their property before purchasing elsewhere.

MORNING SESSION OF THE SEVENTEENTH NATIONAL IRRIGATION CONGRESS AT SPOKANE, WASHINGTON, AUGUST 9, 1909

Anyone desiring detailed information can secure same by writing the Luse Land and Development Company (Limited), Sutherlin, Oregon, or St. Paul, Minn.

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ANY ONE who is interested in the fruit industry and desires information about any particular section of the Northwest can get further information writing the Commercial Club in any of the following cities: In Washington there are Wenatchee, Cashmere, North Yakima, Pasco, Kennewick, White Salmon, Spokane, Toppenish, Prosser, Okanogan, Walla Walla and Dayton. In Oregon there are Baker City, La Grande, Hermiston, Stanfield, Irrigon, Mosier, Hood River, Portland, McMinnville, Salem, Albany, Eugene, Creswell, Sutherlin, Roseburg, Grants Pass, Medford, Forest Grove, Hillsboro, Corvallis. In Idaho there are Caldwell, Nampa, Payette, Weiser, Boise, Buhl, Burley, Lewiston and Twin Falls.

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Almost the whole world knows of Hood River as a place that produces the best fruits, and all of Hood River Valley should know, and could know, that there is one place in Hood River, under the firm name of R. B. Bragg & Co., where the people can depend on getting most reliable dry goods, clothing, shoes and groceries at the most reasonable prices that are possible; try it.

THE APPLE OF SUTHERLIN VALLEY

ONE OF MANY BEAUTIFUL HOMES, WEISER, IDAHO

A DESCRIPTION OF EMMETT, IDAHO, DISTRICT

"THE most beautiful sight I have ever seen," was the spontaneous exclamation of an American traveler, who had toured not only his own country, but also famous places of Europe, as he caught his first view of the Emmett country from the top of Freezeout, one of the high points in the semicircle of hills that skirt the upper end of the Payette Valley. It was a bright spring morning and the wide valley, with its carpet of green, the orchards decked and crowned with purple and pink and gold and green, the irrigating ditches shimmering beneath the sun like ribbons of silver, the snow-capped mountains of Oregon a hundred miles distant, and the forest-crowned mountains nearer by —these made a bewitching picture that charms whoever sees it. That was four years ago. If the same traveler were to pass this way again he would scarce believe it was the same place, so rapid has been the development.

During the past three years water has been placed on 18,000 acres of bench land and approximately 5,000 acres of slope land along the foothills, and new settlers, a large number of whom came from Palisade, Colorado, have replaced the sagebrush with orchards and grain and alfalfa fields. The Palisade fruit raisers have settled almost exclusively on the bench, and last year planted 2,000 acres to apple trees, principally Jonathan and Rome Beauty varieties. Next spring, it is conservatively estimated, 3,000 additional acres will be planted to apple trees.

The slope land is undergoing an equal development. Both by character of soil and protection from early frosts, this land on the gently ascending foothills is particularly adapted to the culture of peaches, apricots, sweet cherries, grapes and berries; accordingly, these classes of fruit are being planted there.

Upon what does the Emmett country base its claim as a fruit section? No doubt many of your readers will wish to be enlightened. From the time of the first settlement in the '60's until the recent completion of the irrigation project, which has made possible the reclamation of the lands mentioned above, fruit growing has been of a desultory character. With the exception of a limited acreage of Italian prunes, providing for shipment about thirty-five carloads a year, there were few commercial orchards. For this one fruit Emmett gained in the markets the reputation of growing the finest prunes in the world, as records of Sgobel & Day, the New York fruit commission house, show. However, small orchards of other kinds of fruit have demonstrated that conditions of soil and climate produce the peach, apricot, sweet cherry and grapes of as fine quality and appearance as it is possible to produce. These conditions have, during the last three years, been recognized by experienced fruit-growers and have attracted to this section many fruit men whose efforts, coupled with natural conditions, will make Emmett known from ocean to ocean as one of the greatest fruit sections of the great Northwest.

Land values are advancing with the development of the valley. Two years ago the bench and slope lands were selling at from $30 to $60 per acre, today they are bringing from $100 to $200 per acre for raw lands, while orchard tracts set to trees last spring bring from $250 to $300 per acre; older orchards selling at correspondingly higher prices.

PAYETTE RIVER. NEVER FAILING SOURCE OF SUPPLY FOR IRRIGATION OF THE ENTIRE PAYETTE VALLEY, IDAHO

Most of the settlers are raising crops in their orchards.

The Jensen Bros. marketed 600 crates of cantaloupes from three acres, receiving $2.50 per crate for them.

Ed Heath received $700 for cantaloupes planted in his peach orchard of three acres.

C. W. Lake raised over five tons of onions from three-fourths of an acre of land, receiving $30 a ton for them.

Andrew Jensen's strawberries brought him $900 an acre and his dewberries $1,100 an acre.

G. A. Warren received from his half acre of strawberries $720 in cash. Owing to the season being two weeks earlier here than in the surrounding country outside the Emmett district, berries are placed on the market when prices are from fifty cents to $1.50 per crate higher.

While potatoes have not been planted extensively, small tracts show that crops will average from 300 to 400 bushels per acre, with good local market.

From the above illustrations, which are fair samples of what anyone can do, the large profits derived from Emmett lands are apparent, and by planting vegetables, berries and fruit the returns start from the first year, and until the new orchards come into bearing.

PRIZE CUPS WON BY STATE OF UTAH AT VARIOUS HORTICULTURAL EXHIBITS AND NATIONAL IRRIGATION CONGRESSES

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THE TWIN FALLS TRACT

I.

The Twin Falls Tract, it is the best,
I've traveled "East" and journeyed West,
I've wandered North and Southward too,
Twin Falls for me, I'm telling you.

II.

The Twin Falls Tract will famous be,
Thousands of orchards here you'll see.
In train loads, apples will go out,
I'm satisfied without a doubt.

III.

The Twin Falls Tract will sure be known,
It will be called "Red Apples' Home,"
Where color, flavor, size, all three,
Perfection and from blemish free.

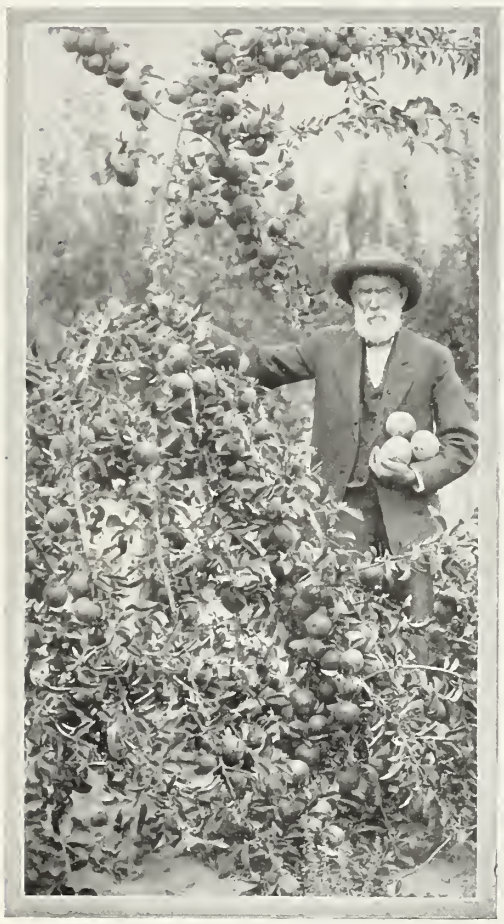
IV.

The Twin Falls Tract is calling you,
Oh, to this call I urge be true.
Come quickly here, and you will see,
Health, wealth, and honor waiting thee.

—J. H. Bolton.

THE FIGHT AGAINST THE APPLE PACKAGE BILL

BELIEVING that the Lafean apple package and grading bill, introduced at the special session of the United States Congress last winter, is designed to favor special interests and that its enactment will prove detrimental to the fruit interests of the Pacific Northwest, the executive committee of the Washington State Horticultural Association and the board of trustees of the National Apple Show, Incorporated, have called a convention of apple growers, shippers, representatives of refrigerator car concerns and box manufacturers to meet in Spokane November 16, for the purpose of considering the provisions of the measure.



SIX-YEAR-OLD APPLE TREE
Owned by Mr. Rockhill, Vale of Cashmere, Washington

That a concerted fight is to be waged against the bill is evidenced by the appended paragraphs, contained in a circular letter to be issued to growers, shippers, box manufacturers and refrigerator car men in the West, by L. G. Monroe, secretary of the Washington State Horticultural Association, and Ren H. Rice, secretary-manager of the National Apple Show.

"This bill is designed, we believe, to favor private interests, and if enacted, much harm to the fruit industry of the Pacific Northwest will result.

"The fame of the apple business of the Pacific Slope and inter-mountain region of the West has become world-wide, and while the superiority of our apples is conceded, much of this fame is due to the manner in which this staple fruit product is prepared for market. We refer to the standard box, which contains a little more than a (Winchester) bushel, the standard dry measure of the United States.

"Uniformity in package and grading is desired, but we contend that the apple growers, who are box-users, have something to say and should be heard on this important matter."

Messrs. Monroe and Rice say in a joint statement that the horticultural societies of Idaho, Oregon and Montana will join in the call and urge growers and shippers in their states to attend the convention, which will begin its sessions at 10 o'clock the morning of November 16, in the G. A. R. Hall of the State Armory in Spokane. The sessions will be open to apple associations and growers' unions and others interested in the movement. Champions of the Lafean bill will also have an opportunity to present their side of the argument.

Where the main canal passes through the hill in a 600-foot tunnel within the city limits of Baker City, Oregon. One mile above the water passes through 600 feet of 48-inch double riveted steel siphon

"We desire the opinion of every grower and shipper in the West on the apple box question," said Mr. Rice, "to determine whether, in their judgment and experience, the present standard should be maintained or a new one adopted. Those who cannot attend are requested to write to L. G. Monroe, secretary Washington Horticultural Association, Spokane, giving their views on the matter.

"Concerted action is imperative at this time on account of its weight in making public opinion and arousing the Western representatives in Congress to the needs of the producers and handlers."

COUNTRY HOME OF JAMES A. MOORE, ON THE COLUMBIA RIVER NEAR PASCO, WASHINGTON

PROSPECTIVE FUTURE OF THE NORTHWEST

BY THE EDITOR

IN THIS edition we have endeavored to indicate the immensity of the Northwest territory, with its wonderful possibilities and opportunities, and we call attention to the article entitled, "The Call of the West," by the late Governor John A. Johnson of Minnesota, which appeared in the October edition of the World's Work. The article is copyrighted, but we were courteously granted permission to use part of it. In the seven states, Washington, Oregon, Idaho, Montana, the Dakotas and Minnesota, there are about 400,000,000 acres, which is double the area of New England and the Middle States. Of this, 100,000,000 acres, in round numbers, is subject to homestead. Fifty million acres in these states will produce a crop of $800,000,000. Think of the possibilities where the area, which is not producing, is eight times the producing area, and if this were all under cultivation, at the present rate of productiveness the output would be something over $6,000,000,000. Of course, there is considerable waste land, yet there awaits 100,000 acres available as homesteads. All of this land in the Northwest that is suitable to fruit will support a family on ten acres, yes, even less; probably five. Some comprehension of the existing opportunities is evident when from $50 to $100 per acre can be made on land growing alfalfa; from $100 to $500 in truck gardening, and from $300 to $1,000 in fruit growing. There are yields where the net profits in fruit growing have been from $1,000 to $3,000 per acre; however, most any conservative man will say that from $100 to $1,000 per acre can be cleared on fruit raising, according to location, the varieties of fruit, and the man.

VARIETY OF VEGETABLES GROWN ON SUNNYSLOPE, OREGON
It is possible to pay for this land with one crop. The fact that this land is on the warm side of the Baker Valley and consequently produces vegetables much earlier than any other section of the valley, makes it very desirable

No one can realize the importance of irrigation on these vast areas without being familiar with the results. We have endeavored in this number to give the readers some idea of the immensity of the territory to be settled, the methods of doing it and the profits that can be made and the opportunities that exist. Land that is valueless without water, with irrigation becomes worth from $500 to $3,000 and $4,000 per acre, and some has been sold at even higher than $4,000 in bearing orchard. Irrigation is probably today the most important feature in connection with the development of the West. We, therefore, call this the "Irrigation Number," and we have added the slogan, which is not original, "Water is Life, Water is Power, Water is Gold," and in the words of some other eloquent individual, "Water is King." With it man absolutely becomes master of the soil and is not dependent on rain or nature. With it, a crop is a certainty under all conditions. Land can be secured under the Carey Act, in government projects and under private canal systems, at exceedingly low figures. Improved property can be purchased at extremely reasonable prices. In the limited space that we have in "Better Fruit" to cover so broad a subject, it is only possible for us to go into generalities and cover the subject of irrigation in a very broad manner. In future numbers from time to time, more or less, we will have something about irrigation, the opportunities and possibilities and the actual results.

Good land can be purchased with water rights from about fifty dollars per acre up, according to locality, distance from a railroad, etc., and in another article in this paper we will publish a list comprising most of the towns having commercial clubs or development leagues, and by writing the secretary of the commercial club in any of the cities mentioned in the list, booklets and other information can be secured which will give one a splendid idea of the opportunities, prices of land, and a good description of the country.

EX-VICE PRESIDENT FAIRBANKS AND PARTY VISITING BOISE, IDAHO

WAREHOUSE OF C. J. SINSEL, BOISE, IDAHO
Size 35x100 feet. Upper floor used for making boxes and for storing. From main floor fruit is loaded into cars on Oregon Short Line. It also has a basement for storing. This warehouse is very complete, having elevator, scales, etc.

THE FRUIT MARKET OF HAMBURG, GERMANY

I. H. LUTTEN & SON

Hamburg, September 13, 1909.

To the Review of the "Better Fruit" Publishing Company, Hood River, Oregon, U. S. A.

Dear Sirs: We just received your number two of last month and reading contents with great interest.

We refer to our advertisement, page 42, and beg to say that we are particularly interested in the apple trade from all countries. We do a large trade in barrels from almost all parts of the United States, and also received some apples in boxes from California. All this fruit is shipped from New York and Boston, Massachusetts, where we have our representatives, as you can see in our advertisement. We have old business relations for many years with Messrs. Simons, Jacobs & Company, Glasgow; Simons, Shuttleworth & Company, Liverpool, and Messrs. Garcia, Jacobs & Company, London, and therefore do our American trade in connection with them.

This season we desire especially to obtain consignments of the fine Hood River apples in boxes, which are shipped in fairly large quantities by Messrs. Rae & Hatfield, New York, but all of them up to now have gone to Bremen and were sold there at very high prices. You know that the principal fruit market of Germany, and undoubtedly of the whole continent of Europe, is Hamburg, and therefore we could never understand why the Oregon apple shippers did not come to an understanding to to get them here, what upsets them very much. As we are the oldest and also one of the most important fruit export their fruit to Hamburg direct. Big Hamburg buyers, which get all kinds of fruit they want in Hamburg, are obliged to go to Bremen, especially to buy apples in boxes, not being able importers and fruit brokers in Hamburg, we are anxious to get direct arrivals of Oregon apples in boxes here to supply our trade, and we could handle large quantities indeed, especially Winesaps, etc. Kindly put our name before your friends and let us know per return, the names of the principal concerns coming into question of your district, in order to communicate with them directly. Also, kindly let us know whether we would do better to appoint an agent in the Oregon district, or work with the exporters direct. Your full information on the subject would oblige.

This year we look forward to a good trade in apples on account of the shortage of the German home crop, and we would not like to lose this opportunity. We might, just to show you the importance of the Hamburg market compared with Bremen, put the following figures before you:

Our city has a population of about a million inhabitants, including the city of Altona; Bremen, about 215,000. We have from Hamburg the best and quickest railway connections with the remainder of Germany, Russia and Austria; also the best and quickest steamers to Norway, Denmark, Sweden and Russia, which countries import all their fruit from the Hamburg market. The best fruit stores are established here, with all the new accommodations and space to warehouse enormous quantities of fruit. We import during the winter season only, from Valencia and Murcia, of Spanish oranges over a million of large cases; Bremen has imported, during the last few years, about 65,000 cases per annum. Of Italian fruit, our import is still considerably larger, amounting to over two millions of boxes of oranges and lemons during the year. We don't think that Bremen receives, during the whole year, 5,000 boxes of lemons and oranges from Italy, and their buyers have, of course, to supply their necessity from Hamburg, as well as for other kinds of fruit. Of Jamaica and Canary bananas we reckon to import closely to a million of crates per annum.

We just put these figures before you that you may understand how contradictory it is for our Hamburg trade buyers to go to Bremen to buy there all apples in boxes, and how much interesting it is for everybody concerned to get direct arrivals to Hamburg of your fruit.

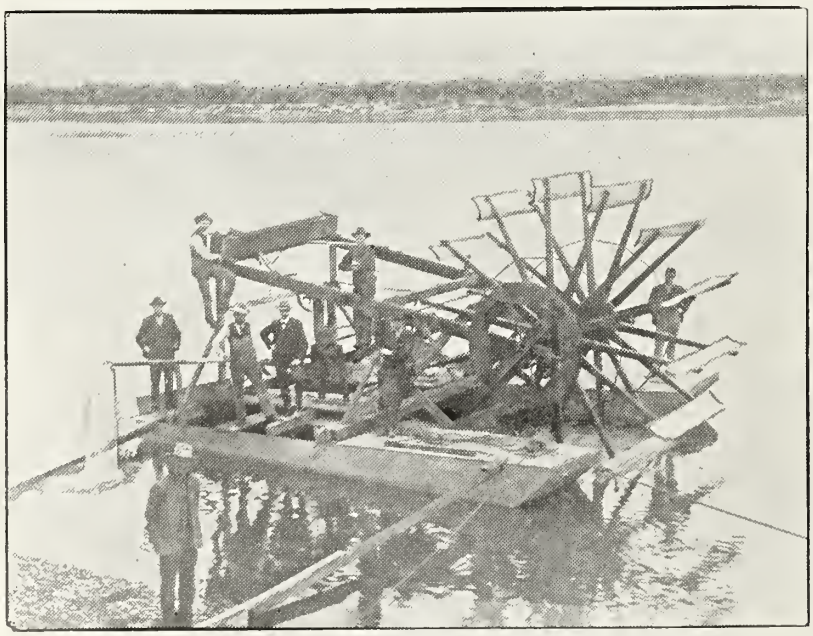
Kindly put in a small advertisement besides the one which we have already on page 42, as per enclosed slip, because this season we want to call the special attention of the Hood River exporters to the Hamburg market with reference to apples in boxes. We would like to have this advertisement in your paper for October, November and December, and ask you to let us know the cost, which we shall remit to you at once. We enclose a small slip showing the size in which we desire our advertisement, for your guidance.

We await your reply to our various questions at your earliest convenience, asking you to kindly talk matters over with your friends, or the principal shippers. Yours faithfully,

I. H. Lutten.

ARMORY BUILDING, SPOKANE, WASHINGTON

Where the Irrigation Congress and last year's National Apple Show were held. The Apple Show this year will be held in this building, and buildings adjoining, covering in all about four acres of ground, November 15-20, 1909



IRRIGATING WHEEL ON SNAKE RIVER, WEISER, IDAHO

WILL HOLD HORTICULTURAL CONGRESS

COUNCIL BLUFFS, IOWA, NOV. 15 TO 20, 1909

An important event in the United States in 1909 will be the second annual exposition of the National Horticultural Congress, which will be given at Council Bluffs, November 15 to 20. The exposition of 1908 was unique. It was the first of its character to be held anywhere. It was the result of a new idea conceived by a few vigorous was outlined and the plans explained to fruit-minds and executed with astonishing alacrity. The preliminary work was not begun until early in the summer of that year, and the organization was not completed until later. An immense brick auditorium, steam heated and capable of holding 5,000 people, was erected and equipped in little more than a month. The scope of the enterprise growers throughout the country in the short time that remained before the opening. Yet with this hasty preparation twenty-one states were represented with fruits grown from Maine to California, from Texas to Minnesota, making possible a most superbly beautiful exposition, which was the wonder and delight of the thousands of visitors who came from all parts of the country.

The 1909 exposition will be of the same character, but of a magnitude much greater and more comprehensive. More than one hundred of the best known horticulturists of the United States are actively engaged in promoting the interests of the exposition. The National Horticultural Congress is an organization representing the leading horticulturists of the whole country, and its sole object is the promotion of the horticultural welfare of every locality of every state. Twenty-eight states are now represented in the organization by men of national reputation. The work has assumed gigantic proportions and the 1909 exposition will be more than twice as large as that of 1908, requiring doubling the capacity of the auditorium at Council Bluffs. All the great railway systems of the country are using their resources to nationalize the 1909 exposition.

The 1909 exposition will be more than a fruit show—it will be a national educational enterprise where every horticulturist may secure useful knowledge. The exhibits will comprise everything useful in connection with horticulture and the latest and best equipment in the warfare against insect pests. Daily lectures and discussions by famous horticultural experts will be features, covering every phase of the fruit-growing industry in every part of the United States.

Council Bluffs is in the geographical center of the United States and is reached by nine of the greatest railway systems in the country, making it of easy access for visitors and exhibitors.

For detailed information regarding the 1909 exposition, write Freeman L. Reed, Supt. Merriam Block, Council Bluffs, Iowa.

The above shows the Pneumatic Water Lift discharging 480 gallons of water per minute through a six-inch pipe twenty-four feet high. This machine is installed in a current having a velocity of three and one-half miles per hour. If installed in a current having a velocity of five miles per hour it will deliver 1,000 gallons per minute to a height of twenty-four feet, or enough water to irrigate 160 acres of land. It was primarily the invention of two men, Gaylor and Robinson, living at Thermopolis, Wyoming, and is now manufactured by the Pneumatic Water Lift and Land Company, of The Dalles, Oregon

ABOUT THE GUNNISON TUNNEL IN COLORADO

The great Gunnison Tunnel, the first project undertaken by the United States Government Reclamation Service, work on which has been progressing steadily for four and one-half years, is now completed, and on September 23 President Taft visited the Uncompahgre Valley and personally opened the gates of the tunnel, turning the flow of the Gunnison River into the magnificently constructed bore, main and distributing canals of this enormous project, which will irrigate 150,000 acres of choicest land now semi-arid.

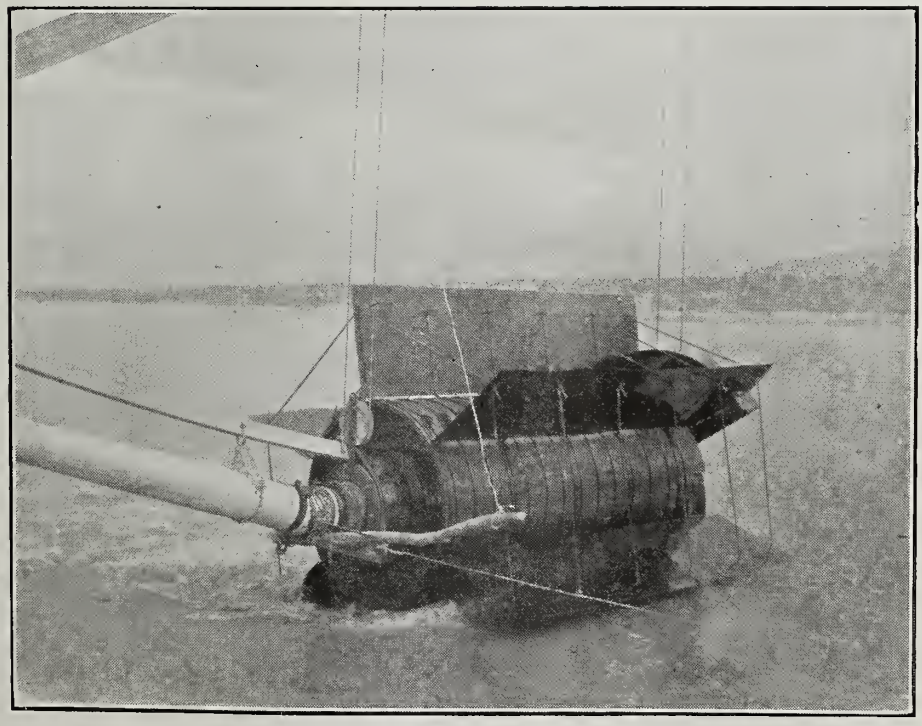
The Gunnison Tunnel is located in Montrose County, in the Uncompahgre Valley, in Colorado. The two gangs of men boring the tunnel met at 5:45 p. m., July 6, 1909, at a point 10,812 feet from the intake on the Gunnison River.

The tunnel is 30,600 feet (six miles) long, 11x13 feet inside measurement, and lined throughout with cement. The main canal is thirty feet wide at the bottom, eighty-three feet wide at the top, and the average depth of water is ten feet. The capacity is 1,300 cubic feet of water per second.

The cost of the tunnel and distributing canals, when completed, will be over $5,000,000, and perpetual water rights will be sold to actual settlers at approximately $35 per acre, being based upon the actual cost of the tunnel. Ten years' time will be allowed for payment, without interest.

The lands to be irrigated are suitable for fruit-growing and the raising of all kinds of farm crops. The water, after it leaves the tunnel, will have 372 feet fall, which can be used to generate electric power sufficient to light every town and every farmhouse in the Uncompahgre Valley and provide power for all kinds of commercial and industrial purposes.

The lands under this project will afford homes for all time to come for a population of at least 25,000 American citizens. Already there are three modern, enterprising and progressive towns, viz: Montrose, Olathe and Delta, located in the Valley, and with the development of this vast area other towns will undoubtedly come into existence to meet the requirements of the rapidly-growing population.



CLOSE VIEW OF THE PNEUMATIC WATER LIFT IN OPERATION

Which when placed in a stream with a specified current will raise any amount of water to any height for which the special machine is made, and not the least feature is its marvelous simplicity, and a feature which will appeal most strongly to all irrigationists is the fact that the cost of maintenance and operation throughout a season is confined to the cost of a few gallons of oil automatically supplied to its two—and only two—case-hardened steel roller bearings. Fuel, whether coal, wood or gasoline, dynamos, turbines or pumps of any description, engineers or novices—all are dispensed with. The annual maintenance fee for a quarter-section is simply the cost of a few gallons of oil. Any current turns the machine, and when it turns the water is lifted up and out, but the swifter the current the greater the amount of water discharged

THE PACIFIC MONTHLY of Portland, Oregon, is a beautifully illustrated monthly magazine. If you are interested in dairying, fruit raising, poultry raising, or want to know about irrigated lands, timber lands, or free government land open to homestead entry, The Pacific Monthly will give you full information. The price is $1.50 a year. If you will send twenty-five cents in stamps, three late issues will be sent you so that you may become acquainted with it. Read the following splendid offers:

OFFER NO. 1—McClure's Magazine, Woman's Home Companion and The Pacific Monthly, costing $4.50, will be sent at a special rate of $3.00.

OFFER NO. 2—McClure's Magazine, Review of Reviews and The Pacific Monthly, costing $6.00, will be sent for $3.60.

OFFER NO. 3—Human Life, Ideal Homes and The Pacific Monthly will be sent for $2.00.

Order by number and send your order accompanied by postal money order for the amount to The Pacific Monthly, Portland, Oregon.

ROBERT T. COCHRAN & CO.

COMMISSION MERCHANTS

290 WASHINGTON STREET NEW YORK

Want Apples

CORRESPONDENCE SOLICITED *Members* International Apple Growers Association

References: D. V. Burrell, Rocky Ford, Colorado; Ozark Improvement Co., Brandsville, Missouri; Oakland Fruit Co., Van Buren, Arkansas; Georgia Fruit Exchange, Atlanta, Georgia; Aetna National Bank of New York; Commercial Agencies

Rae & Hatfield

Largest Handlers of Pacific Coast Fruits in the East

REPRESENTING THE FOREMOST WESTERN SHIPPING COMPANIES AND ASSOCIATIONS ON THE NEW YORK MARKET

Operating in All Producing Sections

Reliable **Experienced** **Prompt**

317 WASHINGTON STREET NEW YORK

Gibson Fruit Company

Not Incorporated

131 SOUTH WATER STREET CHICAGO, ILLINOIS

Great Central Market

We specialize in fancy Pacific Coast and Northwestern fruit. We are general distributing and Eastern marketing agents for some of the largest associations and shippers in the Northwest. We make a specialty of selling f. o. b. in transit or delivered, whichever way will realize best results for the shipper.

If you have not already arranged for the disposition of your shipments, make us your general Eastern sales agents. Will give your business special attention.

Mr. W. C. Michael, our Northwestern representative, is well known to a large number of the shippers of that section, and will be glad to call and see you during the season.

We own our own cold storage plant, the only one on South Water Street. It is an up-to-date one with a capacity for one hundred thousand boxes of apples. This, in connection with our store, places us in the best position of any one in the fruit business to protect the interests of the shippers.

We refer you to The First National Bank, Chicago, The Chicago Packer *and the* Produce Reporter Company

CRUTCHFIELD & WOOLFOLK OF PITTSBURG

CRUTCHFIELD & WOOLFOLK, of Pittsburg, Pennsylvania, the well-known sales agents for Northwestern box apples, are now handling some big blocks of excellent fruit and will be the largest operators in the business this year. They report the markets in good condition and believe that the growers will realize even better prices for fruit well packed and graded. They strongly urge the growers to be more careful than ever in putting up their apples, as the fancy trade that pays the fancy prices is extremely critical, and especially so when big prices are being realized. Crutchfield & Woolfolk have some large orders booked ahead for Western apples and prices will be quoted on dates of shipment. If you have not made any marketing arrangements for your crop this year and wish to obtain the highest prices that this country or the world will pay for well packed and well graded fruit, it will be to your interest to get in touch with Crutchfield & Woolfolk of Pittsburg, Pennsylvania. They issue an interesting booklet on their methods of f. o. b. selling which explains their most excellent equipment, whereby they have given such wonderful satisfaction as to prices secured for their clients. With their perfected system of marketing the great volume of business they control each year, they have no dull days in the year. They have an army of men in their employ who are constantly securing for them large contracts to handle from every producing section of the United States. They are constantly and daily before the whole buying trade of the country, and consequently they are able to secure the extreme market price for their growers. Crutchfield & Woolfolk are now the selling agents for the output of the following associations, unions and growers: The Yakima Valley Union, Granger, Washington; Cashmere Fruit Growers' Union, Cashmere, Washington; Dryden Fruit Growers' Union, Dryden, Washington; Malaga Fruit Growers' Union, Malaga, Washington; Farmington Fruit Growers' Union, Farmington, Washington; G. T. Richardson, Monitor, Washington; the total output of Monitor; the famous Poplar Crest Orchards of Farmington, Washington, formerly owned by General T. R. Tannatt, but now owned by B. C. Cameron, same containing eighty-one acres of apples; Mike Horan, the apple king of Wenatchee, Washington; H. S. Simmons of Wenatchee, Jack Lillis of Wenatchee, and many others that our space will not permit mention of. In Colorado they have some large deals, a few of which are the Colorado Fruit Growers' Association, Delta, Colorado, Paonia, Fruita, Grand Junction, Palisades. Also the Aztec Fruit Growers' Association, Aztec, New Mexico. In Oregon they have contracts from Grants Pass and Medford. From the above contracts Crutchfield & Woolfolk will no doubt be the dominant factors in the box apple deal for 1909. It is surely merit on their part that has secured for them this immense business, and it will certainly pay any grower or growers who want their brands known to the world to open up at once negotiations with Crutchfield & Woolfolk of Pittsburg, Pennsylvania. If you will give them a list of what you will have they can sell same for you. If you want a part of your crop put in cold storage, they are equipped to do this. In fact, they are prepared to handle your business in any way you prefer. It will most assuredly pay you to drop them a line, quicker the better. They put your fruit before the whole buying trade and create for you an established outlet each year. As your output increases they increase the outlet by constantly opening up new markets. Write to them today.

◈ ◈ ◈

MALTHOID roofing covers nearly every building at the Alaska-Yukon Exposition. This is very gratifying to "Better Fruit," as this concerns our advertisers, and it is always the aim of "Better Fruit" to select from each class of business the most reliable manufacturers and makes. It is made by the Paraffine Paint Company. Their address will be found in their ad in this issue. This will be of interest to fruit-growers for the reason that there are many buildings erected by orchardists that require roofing, and it will be of interest to them to know which one is good.

A Trip to the Coast

Is incomplete without a ride on the

Mt. Hood Railroad

By Mountain Streams, Virgin Forests, Apple Orchards and Snow Capped Peaks

Connects with O. R. & N. at Hood River, Oregon

OLDEST LIVERY COMPANY IN THE VALLEY

TRANSFER & LIVERY CO.

Special attention to commercial men, camping & fishing parties

TELEPHONE MAIN 131

HOOD RIVER, OREGON

We Want Your Shipments OF

Apples, Pears, Potatoes, Onions

And all other varieties of seasonable

Fruits and Produce

Car lots or less. We are at your service and guarantee you a square deal. Correspondence and consignments solicited.

References:
Exchange National Bank, Spokane
First National Bank, Cœur d'Alene

GRANT McCANN & CO., INC.

Wholesale Fruit and Produce

Spokane, Washington

Walter C. Deyo Emery Deyo

W. C. Deyo & Bro.

Box Apples a Specialty

859-861 Washington Street

NEW YORK

Members of National League of Commission Merchants

APPLES IN BOXES

We solicit consignments of best red varieties for Hamburg, which is the biggest market on the continent of Europe for foreign fruit

WE USE MODERN ECONOMY CODE

BEST VALUES, QUICKEST RETURNS AND PERSONAL ATTENTION

J. H. LÜTTEN & SON

Established 1835

CABLES: LUTTENSON HAMBURG, GERMANY

COLD STORAGE

For Apples, Pears, Peaches, Etc.

Our storage rooms are clean and sweet. Our insurance rate the lowest in the city. Our location (the big yellow brick building between the steel bridge and Union Depot) is the most convenient. Write for terms and information. Special rate on large lots. Private track facilities.

HAZELWOOD CREAM CO.

Phones: A 6001—Exchange 40 Portland, Oregon

OREGON

The Portland Commercial Club

Will be pleased to furnish you literature from all points in Oregon, in addition to the most artistic and expensive booklet ever circulated, free of charge. No other subject gets half the attention given to fruit growing in these publications. Write today to

Portland Commercial Club
Portland, Oregon

IS THE PLACE FOR YOU

WANTED TO RENT

A young man, married, thoroughly familiar with orcharding in all its branches, as carried on in the Northwest, wishes to rent for one year or more, with possible privilege of buying, a fruit ranch in bearing. Orchard must bear close investigation. All correspondence strictly confidential. Address Rancher, care "Better Fruit."

J. M. Schmeltzer, Secretary

Hood River Abstract Company

Hood River, Oregon

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Hood River Banking & Trust Company

Hood River, Oregon

We own and occupy the finest equipped and most modern bank in Hood River County. A general banking and trust business transacted. Safe deposit boxes. Interest paid on time and savings deposits. Make our bank your headquarters when in Hood River. Correspondence and your patronage solicited

CAPITAL STOCK, $100,000 SURPLUS, $20,000

FIRST NATIONAL BANK

HOOD RIVER, OREGON

F. S. STANLEY, *President*
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Assets over $325,000

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I WILL SELL

Ten acres of my big irrigated peach and pear orchard of thrifty one-year-old trees. Located on high bench land on county road, 1½ miles from the city. Perpetual water right, woven wire fence; no buildings. $1,000 cash, balance yearly. It can produce $2,000 to $3,000 next year. Address P. O. Box 103, Kennewick, Washington.

◈ ◈ ◈

SITUATION WANTED

A well referenced, practical, graduate horticulturist desires a position with some large fruit concern.

Address C. H. R.
505 Paradise St., Pullman, Washington

◈ ◈ ◈

160 ACRES OF MOSIER VALLEY RED APPLE LAND

All cleared but 30 acres; 30 acres planted to apples, cherries and peaches, all growing and in good condition. This is your chance to get a commercial orchard at a reasonable price. Four miles from Mosier station. For further particulars address

THE DUNN-LAWRENCE COMPANY
248 Alder Street Portland, Oregon

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Irrigated Lands Bought and Sold

The Best of Earth

TWIN FALLS TRACTS

Write for Illustrated Booklet

TWIN FALLS REALTY CO.

S. H. Bolton, *President*

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LADD & TILTON BANK

ESTABLISHED 1859. *Oldest Bank on the Pacific Coast*

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Capital fully paid	$1,000,000
Surplus and undivided profits	$500,000

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Accounts of banks, firms, corporations and individuals solicited. Travelers' checks for sale, and drafts issued available in all countries of Europe.

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Established 1900
Incorporated 1905

Butler Banking Company

HOOD RIVER, OREGON

Capital Fully Paid, $50,000 Surplus and Profits are $30,000

INTEREST PAID ON TIME DEPOSITS

We Give Special Attention to Good Farm Loans

If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY

The School of Size is Good
" " " Quality " Better
" " Having Both " Best

Investigation will prove we have both

"Business Training in Business Methods by Business Experts"

Behnke-Walker

The Leading Business College

Portland, Oregon

BETTER FRUIT

HOOD RIVER, OREGON

OFFICIAL ORGAN OF
THE NORTHWEST FRUIT GROWERS ASSOCIATION

A MONTHLY ILLUSTRATED MAGAZINE
PUBLISHED IN THE INTEREST OF UP-TO-DATE
FRUIT GROWING AND MARKETING

ALL COMMUNICATIONS SHOULD BE ADDRESSED AND
REMITTANCES MADE PAYABLE TO

BETTER FRUIT PUBLISHING COMPANY

E. H. SHEPARD — EDITOR AND PUBLISHER
C. R. GREISEN — TRAVELING REPRESENTATIVE

SUBSCRIPTION PRICE $1.00 PER YEAR
IN ADVANCE IN UNITED STATES AND CANADA

FOREIGN SUBSCRIPTIONS, *Including Postage*, $1.50
ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906, at the Post Office at Hood River, Oregon, under Act of Congress of March 3, 1879

BETTER FRUIT A GREAT HELP IN IMPROVING AND DEVELOPING THE COUNTRY.—"Better Fruit" is developing the fruit industry of the Northwest and it is with pride that we point to every number that we have issued, especially this number. We believe we have made good the name that stands at the head of this magazine, and we believe you can judge the future on our past record. "Better Fruit" stands for the welfare of every fruit section in the Northwest territory from Colorado to the Pacific Coast, including Utah, Montana, Idaho, Washington, Oregon and British Columbia. The fruit growers in the different districts who read and travel have some conception of the great good that "Better Fruit" is doing. They have some comprehension of the wonderful influence it is exerting on the Easterners and they know that the people that "Better Fruit" has brought from the East to the West to become fruit-growers is legion. Many of them, who are familiar with what we are doing, know how thoroughly systematic our arrangements for distribution are throughout the East, yet perhaps few know that "Better Fruit" already has subscribers in every state in the Union, every province in Canada, and seventeen foreign countries, which is constantly bringing people to the West. An Easterner is not always from Missouri, but you not only have to show him, but you have to show him well and you have to convince him. "Better Fruit" stands today alone as the only publication in the entire Pacific Northwest as the one paper that is strong enough in merit, in quality, in beauty and in size that fills the bill. Our readers and our patrons must admit that whenever an Easterner or a man from the Middle West takes up a copy of "Better Fruit" he cannot help but be impressed, and he must know if he picks up some local horticultural paper, that perhaps only contains sixteen to twenty pages, printed on only ordinary paper, with cheap illustrations, that it makes no impression. We leave it to you to figure out for yourself how much better it is to have an elegant magazine like "Better Fruit," distributed largely throughout the East, than it is to have some small, poorly printed paper reaching these same people. And we might add that comparatively few such papers do reach people in the East and Middle West, for their circulation is seldom over 1,000 or 2,000 copies per month, which is confined to its own immediate locality. If you have a local paper, support it, but if you want a good paper that contains all the up-to-date improvements of modern fruit growers from all districts, if you want a paper that will assist in the development of the great and glorious Pacific Northwest, one that is working tooth and nail for every fruit-grower in this territory, one that is endeavoring in every issue to bring people of ability and means to assist us in developing this great country, support "Better Fruit."

New York State College of Agriculture, at Cornell University.

Ithaca, New York,
September 30, 1909.

Mr. Shepard, Editor "Better Fruit,"
Hood River, Oregon.

Dear Mr. Shepard: Our student, Mr. Hitchcock, has just told me that you could probably give to the library of the College of Agriculture here a set of "Better Fruit." We should very much appreciate a set of this kind, and it would be of great use to us.

I am going away today for an indefinite leave of absence, but the set would be put in the library and taken good care of if you could send it. Yours very truly,

L. H. Bailey, Director.

The above letter from L. H. Bailey is certainly one of the greatest compliments ever paid to "Better Fruit." Mr Bailey is Dean of Cornell University, author of the Encyclopedia of Horticulture and Agriculture, and the author of a great many books on horticulture, a list of which appears elsewhere in this edition. He is recognized as the greatest authority on horticulture in America.

◈ ◈ ◈

THE half-tone engravings, showing scenes of the irrigation ditch near Buhl, Goose Creek, Cary Act Lands, Twin Falls South Side Canal, Twin Falls 180 Feet High, Snake River, Million Dollar Dam, the City of Twin Falls one and two years old, and the City of Twin Falls three years old, are furnished us through the courtesy of Mr. D. E. Burley, General Passenger Agent of the Oregon Short Line Railroad Company, Salt Lake, Utah. These illustrations have been used in Idaho community booklets issued by Mr. Burley's department in connection with the well known "community plan," which is doing so much to develop the Pacific Northwest. We desire to express our thanks for this courtesy.

◈ ◈ ◈

THE AMERICAN SPRAYER COMPANY, a new concern manufacturing the Wallace sprayers, which are well known among fruit growers, have moved their factory to Minneapolis, where they will be in closer touch with the fruit growers of the Northwest than in their former location at Champaign, Illinois. We might add that they have improved their plant and enlarged it so as to be able to take care of their increasing business.

Emmett Fruit Lands

The Best Climate

The Best Soil — The Best Water

Write for booklet to

The Steunenberg-Marvin Co.
Limited
Emmett, Idaho

CORRESPONDENCE SOLICITED

Over 1500 Acres of Raw Fruit Land

IN THE

YAKIMA VALLEY

Within view of North Yakima, Washington, owned by the ILER INVESTMENT CO., and coming under the Government Tieton Canal and within two to three miles of improved fruit lands that are valued today at from $1500 to $2500 per acre, will be disposed of at from $150 to $250 per acre within the next year. If you would be satisfied with fifty per cent per year on your investment for five years, write the

ILER INVESTMENT CO. — Box 221, North Yakima, Washington

High Class Hood River Land

BUY THE BEST AND YOU WILL NEVER REGRET IT

IN advising our customers to buy first class land, we can speak from experience of how such land increases in value when developed. We have had dozens of cases during the past three years where land has doubled in value. At the prices that prevail in the Hood River district now, one cannot fail to make good if they buy high class land.

10 acres 5 miles out on West Side, all in 1-year-old Spitzenbergs, Newtowns and Ortleys; 35,000 strawberry plants; 7½ inches water stock; all fenced with woven wire fencing. Price $7,000; easy terms.

10 acres 6½ miles out on East Side; 8 acres in 3-year-old Spitzenbergs and Newtowns; 2 acres in clover; all very best volcanic ash soil; good neighborhood, near store and shipping station. Price $7,500; easy terms.

10 acres 6 miles out on East Side; 7 acres 8-year-old trees, Spitzenbergs and Newtowns; 3 acres 4-year-old Spitzenbergs and Newtowns; Jonathans for pollenization; 5-room house, barn, wood shed, chicken house, etc.; good well; in the best district of the valley; trees all uniform and in perfect condition. Price $16.500; terms.

10 acres 3 miles out on West Side; 3½ acres 4-year-old Spitzenbergs and Newtowns; 6½ acres 1-year-old Spitzenbergs and Newtowns; 4 acres strawberries between young trees; splendid buildinig site overlooking the East Side and the Hood River; 10 shares water stock. Price $9,000; easy terms.

12 acres 2½ miles out on West Side; 2 acres 16-year-old trees, Spitzenbergs and Newtowns; 3½ acres 2 and 3-year-old trees and 4 acres 1-year-old Spitzenbergs and Newtowns; 4 acres strawberries, 1 acre 1-year-old pears, 1 acre alfalfa; 5-room house, barn, wood shed, etc.; good well; 6 inches water stock; all farm tools, wagon, harness. Price $13,500; easy terms.

20 acres 5 miles out on West Side; 3 acres 1-year-old Spitzenbergs and a few Ben Davis; 8 acres 2-year-old Spitzenbergs and Newtowns; 5 acres plowed and ready for setting; balance of land in grass; county road along two sides; apple house; good neighborhood; fine soil. Price $10,000; easy terms.

20 acres 6½ miles out on East Side; 17 acres in 5 and 6-year-old Spitzenbergs, Newtowns and Jonathans; 3 acres alfalfa and garden; good 6-room house, barn and outbuildings; 6 inches water stock; very sightly; best of apple land; in good neighborhood and on main traveled road. Price $21,000; easy terms.

20 acres 7½ miles out on East Side; 4 acres in 4-year-old Spitzenbergs, Newtowns and Ortleys; 4 acres in 1-year-old Spitzenbergs, Newtowns and Ortleys; 8 acres in clover and alfalfa, 2 acres in oats, 2 acres in potatoes; 4-room plastered house, closets; good well and barn, chicken house and wood shed; team, wagons, harness, all farm implements and equipment and stock; 3 shares irrigation stock, 9 inches water. Price $11,000; easy terms.

160 acres 5 miles south of Mosier; 25 acres in orchard, 6 acres in bearing, all commercial varieties; home orchard of all kinds of small fruits, several grape vines of different varieties; water available for irrigation; house, small barn, winter cellar, wood shed, etc.; 140 acres good apple land. The orchard alone is worth the price asked for the whole, $12,000; easy terms.

200 acres in the Mount Hood district, 12½ miles from town; 50 acres in cultivation, 7 acres in orchard from 2 to 8 years old, all good varieties; 40 acres in timothy, alfalfa and clover; 3 acres vegetables; 3 barns, 1 new 9-room house and 1 small house, winter cellars, chicken house, wood shed, etc.; complete blacksmith outfit, all farm tools and implements, hack and harness; on main traveled road to Mount Hood. Price $20,000; easy terms.

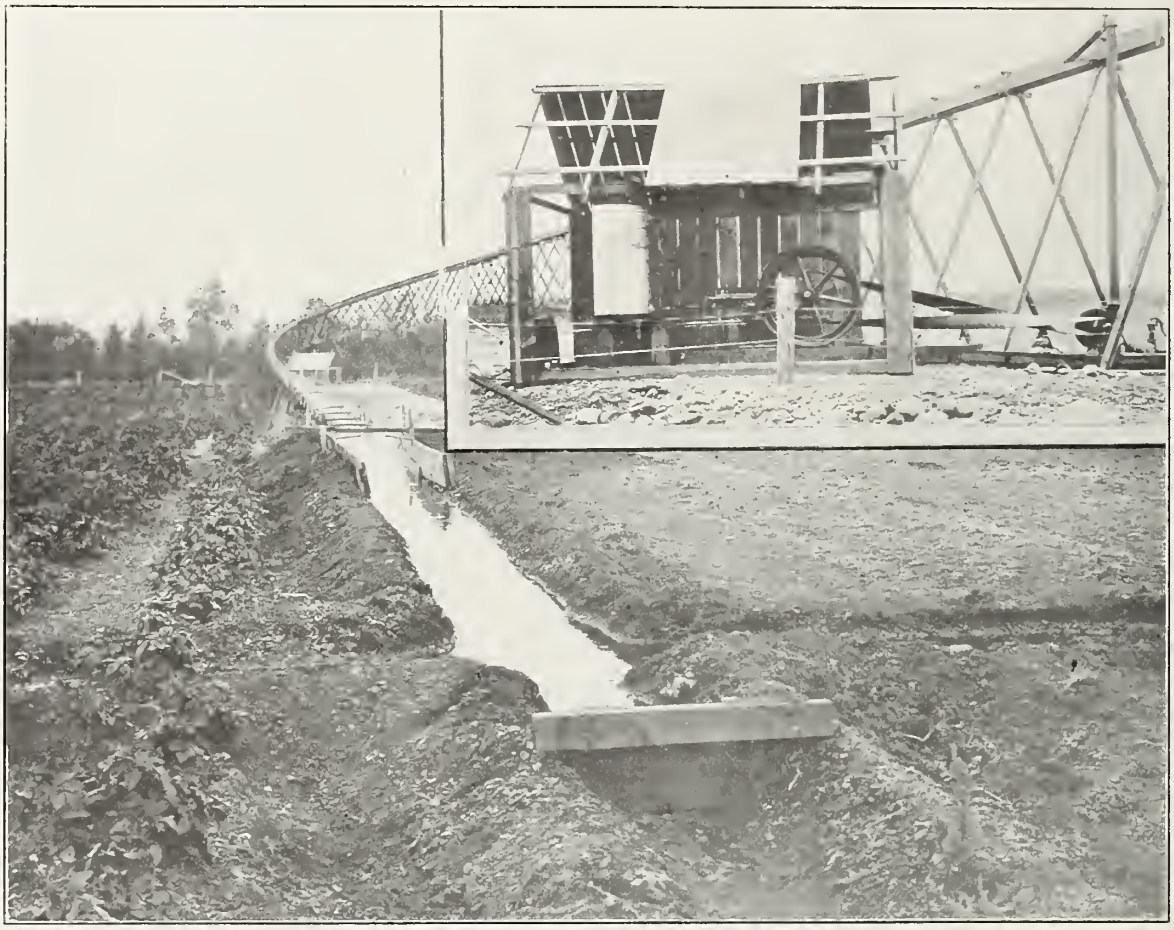
J. H. HEILBRONNER & CO.

The Reliable Dealers

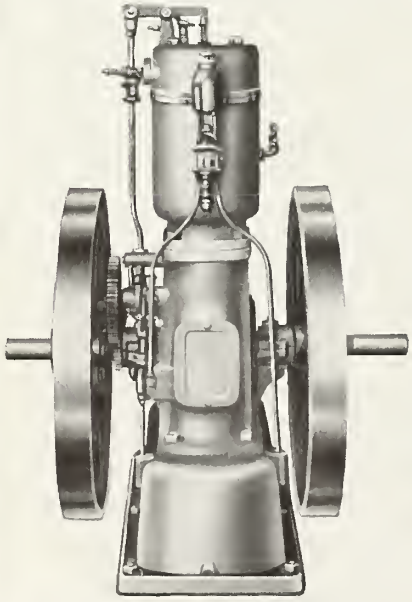
Davidson Building Hood River, Oregon

Efficient Irrigating Outfits

We Sell Them



Above illustration shows one of our plants irrigating twenty-five acres of land



FIVE H. P. STOVER

This Particular Outfit is Composed of a

12 H. P. RELIABLE STOVER GASOLINE ENGINE

and

5 INCH JACKSON CENTRIFUGAL PUMP

Having an Hourly Capacity of 42,000 Gallons

We sell outfits complete, engines, pumps, pipe and fittings

LET US GIVE YOU AN ESTIMATE

Mitchell
LEWIS & STAYER CO.

PORTLAND OREGON
SPOKANE WASHINGTON
BOISE IDAHO
SALEM OREGON

MOVEMENT FOR COMMUNITY DEVELOPMENT

BY WILLIAM BITTLE WELLS

While all Oregon has heard of the community co-operative plan of the Harriman lines, it is pertinent to state for the benefit of those who are not conversant with this plan of community development that it is an arrangement with communities on the Harriman lines whereby the burden of the publicity work is lifted from the shoulders of the community and placed upon experts employed by the Southern Pacific Company, Lines in Oregon; the Oregon Railroad & Navigation Company, or the Oregon Short Line, as the case may be.

The plan consists of twenty features, one of which is the publication of literature. Other features are advertising through tried mediums, newspapers, magazines, etc.; exhibition of products, distribution of literature, and many other forms of publicity which experience has demonstrated to be of value. The results obtained through this plan have been nothing short of phenomenal. The colonist movement to Oregon was 100 per cent greater during the months of March and April, 1909, than it was during the preceding season. It is not too much to say that the increased travel can be attributed largely to the community plan, inasmuch as practically the entire State of Oregon has adopted this method of publicity and development.

The literature issued under this plan has struck a new note in community publicity, a fact which is recognized by some of the strong educational institutions throughout the country. The University of Pennsylvania, for example, is using the booklets on Oregon as text books in one of its departments. It is generally admitted that this plan has brought to Oregon the highest grade and the largest amount of literature that has been published during the past year hy any state in the Union. It has demonstrated to communities the necessity and advisability of high grade publicity and it has been the indirect means of bringing about in the communities themselves a larger amount of civic pride and producing, consequently, some important civic improvements. The publication of this immense amount of literature has not only stimulated travel to Oregon and to other sections which have adopted the plan, but it has brought the communities themselves to a realization of their own opportunities and possibilities. Publicity has increased land values in every community in Oregon, without exception, and it has stirred the state to a more united effort to reach out for greater attainments in the future.

The communities which have adopted the community co-operative plan of the Oregon Railroad & Navigation Company and the Southern Pacific Company, Lines in Oregon, as executed by the Sunset Homeseekers Bureau, are as follows:

Medford, Oregon, was the first to adopt this plan, and has followed this method of publicity for four years in succession, beginning with 1907. The first booklet issued for Medford consisted of 20,000 copies; the booklet issued for 1908 consisted of 35,000 copies; the booklet issued for 1909 consisted of 63,500 copies, and the booklet for 1910 will consist of at least 50,000 copies. Work on this booklet is now under way. The total number of copies of the leading booklet issued for Medford, Oregon, under this plan, will aggregate more than 165,000 copies. This is for what is known as the "Community Book" proper, and does not include other forms of literature which have been published for Medford under this plan and which will agregate 140,000 copies. The total will reach over 305,000 copies.

Ashland, Oregon, has adopted this plan for two years in succession, and of the community booklets which have been issued for Ashland 45,000 copies have been published. Seventy-five thousand copies of other kinds of literature have been issued for Ashland.

Grants Pass, Oregon, has adopted the plan two years in succession, and has secured community booklets aggregating 55,000 copies. Seventy-five thousand copies of other literature have been issued for Grants Pass.

Central Point, Oregon, has just adopted the community plan with its various features, and will have issued for it four kinds of literature aggregating 65,000 copies. This includes what is known as the community booklet, the conductor booklet, the colonist folder and a postal folder. This literature is designed to meet entirely different requirements and is consequently of varying grades. The community plan in the past included three grades of literature, namely, the community booklet, the colonist folder, and the conductor booklet. The postal folder has just been added. It is designed to keep the business men of a community as thoroughly in touch as possible with the

Stanley-Smith Lumber Co.

WHOLESALE AND RETAIL

LUMBER

Lath, Shingles, Wood, Etc.

Hood River, Oregon

R. E. HARBISON A. L. NEWTON

WE MAKE THEM OF EVERY DESCRIPTION

BOXES

MADE OF ODORLESS WHITE FIR

The kind that helped to make Hood River famous. Used by the best trade. Write for prices

We make Hood River Apple Box Press, the best on the market

HOOD RIVER BOX CO.

Formerly owned by the Davidson Fruit Company HOOD RIVER, OREGON

FRUIT BOXES

WE ARE EXTENSIVE MANUFACTURERS OF

Five Pound Tin Top Baskets
Common Quart Hallocks
Plant Bands
Shipping Crates
Apple, Pear, Peach and Picking BOXES

OREGON AGENTS FOR THE

Hoquiam Patent Folding Berry Hallocks

We Solicit Your Inquiries

Multnomah Lumber & Box Co.

Foot Bancroft Avenue PORTLAND, OREGON

PINE BOXES

BRIGHT, LIGHT FRUIT BOXES FROM THE FAMOUS KLICKITAT PINE

Our new plant can fill your orders promptly and satisfactorily and save you money. Send your specifications and ask for prices

Klickitat Pine Lumber Co.

Portland Office: 26 Concord Building GOLDENDALE, WASH.

The Hood River Electric Light, Power & Water Co.

DOING A GENERAL ELECTRIC LIGHT AND POWER BUSINESS

TWENTY-FOUR HOUR SERVICE

City Water Works System for Domestic and Municipal Use. Are prepared to furnish 3,000 horsepower, either Electric or Water, at Reasonable Rates

General Office, HOOD RIVER, OREGON

work that the commercial organization of the community is doing. These folders are sent out with letters written by business men of the community to their regular correspondents, and in addition to the write-up of the community's attractions this folder contains a return postal card, one side of which is addressed to the secretary of the commercial organization, while on the other side is a request asking for more detailed information on subjects enumerated, and which is to be checked by the person receiving the card. The larger or community booklet can then be sent by the Commercial Club when requested by the recipient of this postal card folder, and a definite and valuable list of inquirers can thus be secured.

Roseburg, Oregon, adopted this plan once and has had issued for it 45,000 copies of the community booklet, and 45,000 copies of other literature.

Oakland, Oregon, has published through this plan 10,000 copies of the community booklet, and 25,000 copies of other literature.

Cottage Grove, Oregon, adopted the plan after making a very searching investigation of its merits and has had issued for it 20,000 copies of a community booklet, as well as 50,000 copies of other literature.

Creswell, Oregon, possibly has the record of raising the largest amount of money per capita (seven dollars) of any community in the State of Oregon. The community co-operative plan was adopted and 20,000 copies of a community booklet

Cupid Flour

Has same standing in the Flour trade that Hood River Apples have in the Fruit trade.

MADE BY

HOOD RIVER MILLING CO.

S. E. Bartmess

UNDERTAKER AND LICENSED EMBALMER

For Oregon and Washington

Furniture, Rugs, Carpets and Building Material

Hood River, Oregon

Send for SPRAY BOOK FREE for the asking

KILL THE SCALE THAT KILLS THE FRUIT

There is no solution so effective as Lime and Sulphur for the destruction of Scale, Oyster Shell Bark Louse, Leaf Curl, Peach Moth and Peach Mildew; and none of the many brands now on the market so strong, pure and free from sediment as

LILLY'S BEST LIME AND SULPHUR SOLUTION

Read what Professor R. W. Thatcher of the Washington Agricultural College says:

"THE CHAS. H. LILLY CO.:—I have examined the sample of your Lime-Sulphur Solution, which you sent in recently, and find that it shows a specific gravity of 1.3269 and contains 25.86 per cent sulphur in solution of .3432 grams per cent. This is the most concentrated solution we have ever examined.

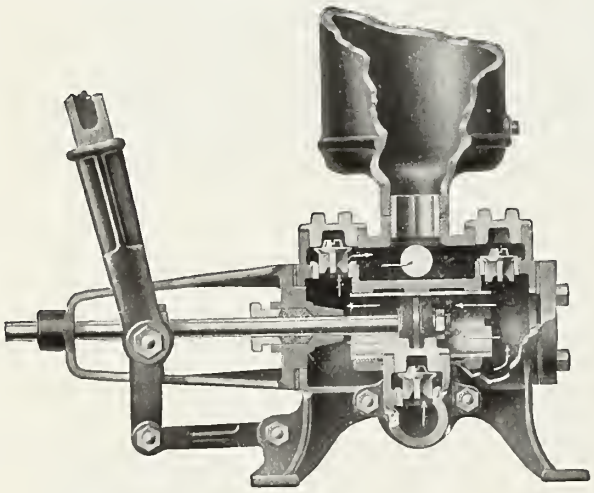
Allow me to congratulate you on your success in working up your factory to the point where you can produce so concentrated a solution as this." Yours very truly,

R. W. THATCHER,

SOLD BY DEALERS

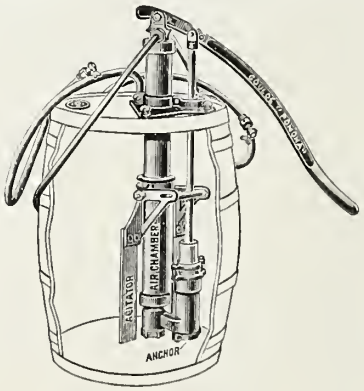
Made by THE CHAS. H. LILLY CO.

SEATTLE—The Big Seed House—PORTLAND

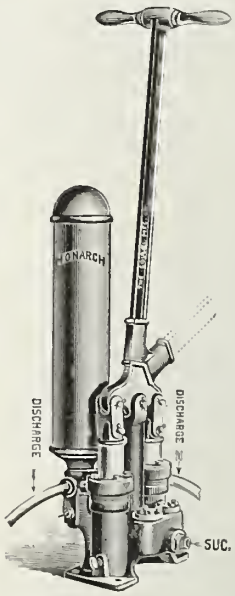


Sectional View of Gould's "Admiral"

Write for valuable free booklet No. 204 on "How to Spray and When to Spray." Ask our spray man for any information he can give you—he speaks from wide experience.



Gould's "Pomona"



Gould's "Monarch"

Gould's Sprayers

Recommendations of leading fruit men, experiment stations and our 20 years' experience all coincide to make us endorse Gould's line of hand and power sprayers as better adapted to Pacific Coast needs than any other spraying apparatus.

We Consider Gould's Goods all Put up on Honor Ask the man who is using a Gould why he never buys another. He'll say a Gould won't wear out, and if he wanted any pump at all he would take another Gould. The Gould is the cheapest as it doesn't cost anything for repairs. Ask the power spray men who have been spraying for years. Ask the man who sells pumps what the purchaser of the Gould pump says. All tell the same story — made right, work right, wear right. We see that they are sold right.

PORTLAND SEED CO. "Diamond Quality"

PORTLAND SEED CO.

SPRAYING MATERIAL, HORTICULTURAL SUPPLIES, SPRAYS

PORTLAND, OREGON

were published, in addition to 45,000 copies of other forms of literature.

Albany, Oregon, adopted the plan two years in succession, after considering all other forms of publicity. Forty-five thousand copies of a community booklet have been issued for Albany, and 70,000 copies of other literature.

Brownsville, Oregon, possesses the unique distinction in the state of having every man in the community who was solicited contribute toward the publicity fund. Ten thousand copies of a community booklet have been issued for Brownsville, and 45,000 copies of other literature.

Corvallis, Oregon, adopted this plan and will have five kinds of literature issued. In all there will be 75,000 copies of literature, as follows: Fifteen thousand copies of a community booklet, 7,500 copies of a folder entitled "Success in Benton County," 7,500 copies of a folder on "Dairying and Allied Industries," 30,000 copies of a colonist folder and 15,000 copies of a conductor booklet.

Salem, Oregon, adopted this plan and has had 20,000 copies of a community booklet and 65,000 copies of other literature.

Dallas, Oregon, has had 10,000 copies of a community booklet published, and 35,000 copies of other literature.

Falls City, Oregon, raised $1,200 in about five minutes to adopt this plan and will have 65,000 copies of various kinds of literature.

Yamhill County, Oregon, as a whole adopted this plan and has had 20,000 copies of a community booklet and 45,000 copies of other literature.

Washington County, Oregon, has had 20,000 copies of a community booklet and 45,000 copies of other literature.

Sheridan, in Yamhill County, adopted the plan after it had been tried by the county as a whole, and will have 55,000 copies of various kinds of literature.

Newberg, in Yamhill County, also adopted the plan after the county had given it a similar trial, and will have 55,000 copies of various kinds of literature.

The Portland Chamber of Commerce has had issued for it under this plan 50,000 copies of a community booklet.

The Portland Commercial Club has had 50,000 copies of a community booklet issued under this plan.

Hood River, Oregon, has had 30,000 copies of a community booklet and 55,000 copies of other literature.

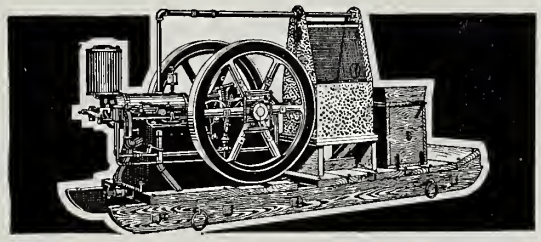
Mosier, Oregon, is a close second to Creswell in the amount of money per capita raised by the community in order to take up this form of advertising. Mosier will have 55,000 copies of various kinds of literature issued for it.

Umatilla County, Oregon, adopted the plan as a county, and has had 20,000 copies of a community booklet and 45,000 copies of other literature.

Hermiston, Oregon, on behalf of the Umatilla

IRRIGATE FROM YOUR OWN RESERVOIR WITH AN I.H.C. GASOLINE ENGINE

Prosperity—
Prospy for short



Water is the great magician that brings life where desolation reigned—transforms the parched land of the cactus into a rural paradise; where luscious fruits, prize garden truck, plump grains and sleek stock abound; where progressive frontiersmen are carving out new empires.

A hundred thousand square miles of former wastes are now ready for the plow, simply because irrigation has brought the water which nature refused.

Irrigation is centuries old—I. H. C. irrigation is new. There was irrigation even before the pyramids were built. But the ancients knew nothing about that independent, never-failing, cheap irrigation which you need.

Don't depend upon the water-ditch that belongs to somebody else. Don't build long ditches and expensive flumes. You have the water. It may be running streams or low-lying ponds. Pump it into your own reservoir.

At times of heavy rainfalls fill your reservoir and have sufficient water through the longest dry spell. You will then have the water when you want it and where you want it.

The modern farmer must use modern methods. He must mix brains with his work; he must fertilize his soil with up-to-date ideas, and the best idea of all is that of an

I. H. C. Gasoline Engine

This powerful little engine will pump unlimited quantities of water for you at a surpisingly small cost.

A type for every section and every problem—all sizes for all farm uses—vertical, horizontal—both stationary and portable; engines on skids; sawing, pumping and spraying outfits. Also I. H. C. gasoline tractors—first-prize-gold-medal winners—the best all-'round farm tractor by test.

An I. H. C. gasoline engine not only frees you from the worries of uncertain rainfalls and the irregularities of gravity irrigation, but the problem of the hired man is simplified—the efficiency of your other farm machines is more than doubled. It will operate your grinder, fanning mill, cream separator, churn, pump, thresher; your bean huller, cider press, alfalfa cutter, and any other machines requiring power.

Nature has given you the land and the water, the seed and the sunshine. A reservoir will cost very little to build, and an I. H. C. engine very little to own. It will save its cost before you run it a year.

Information regarding I. H. C. engines will be cheerfully given by the local agent; or, if you prefer, write to our nearest branch house for catalogue, prices and further details.

WESTERN BRANCH HOUSES: Denver, Colo.; Portland, Ore.; Salt Lake City, Utah; Helena, Mont.; Spokane, Wash.; San Francisco, Cal.

INTERNATIONAL HARVESTER COMPANY OF AMERICA
(INCORPORATED)
CHICAGO, U. S. A.

LOOK FOR THIS TRADE MARK ON THE GENUINE

Look for the I.H.C. Trade-Mark. It is a Seal of Excellence and a Guarantee of Quality.

SAVE MONEY
By Being Systematic

Our Pocket System has an indexed page for every day in the year, with additional sheets for Addresses, Cash, etc., etc.

Send 15c for 70-page filler for October, or October and November for 25c.

Leather Cover with Pocket for 75c, or $1.00 brings you, postpaid, entire outfit dated to December 31, 1909.

"FIND IT" POCKET SYSTEM
808 Pike Street, Seattle, Washington

The PARIS FAIR

Hood River's Largest and Best Store

DRY GOODS
SHOES, CLOTHING

We are offering some extra specials in our Clothing Department. Ask to see them

Try a pair of American Lady $3 and $3.50 Shoes, or American Gentleman $3.50 and $4

THINGS WE ARE AGENTS FOR

KNOX HATS

ALFRED BENJAMIN & CO.'S CLOTHING

DR. JAEGER UNDERWEAR

DR. DEIMEL LINEN MESH UNDERWEAR

DENT'S and FOWNES' GLOVES

Buffum & Pendleton
311 Morrison St., Portland, Oregon

Salem Tile Factory

GOLD MEDAL

Highest Award on Tile at Lewis & Clark Exposition

Tile from 3 to 12 inch

Order carload lots, or for further particulars write for booklet or call on or address

J. E. MURPHY
Fairgrounds Post Office, Oregon

Project Development League, has had issued 55,000 copies of various kinds of literature.

Stanfield, Oregon, in Umatilla County, has adopted this plan. This community has just been created and has raised an unprecedented amount for publicity. It will have 70,000 copies of various kinds of literature.

Elgin, Oregon, has had 45,000 copies of various kinds of literature.

Dayton and Waitsburg, Washington, combined and adopted this plan, and had 20,000 copies of the community booklet issued for them jointly, and 45,000 copies of other literature.

Vancouver, Washington, adopted the plan in its early stages. Twenty thousand copies of a community booklet were issued for that city, and 15,000 copies of other literature.

Walla Walla, Washington, has had 20,000 copies of a community booklet and 45,000 copies of other literature.

The total number of copies of various forms of literature issued or contracted for for the above mentioned communities is 2,220,000.

It is impossible to make an absolutely correct estimate of the immense amount of publicity that has been given in other ways to the communities in Oregon. Through this plan Sunset Magazine has printed over 25,000,000 pages of advertising matter devoted to Oregon and over 10,000,000 pages of articles on various communities of the Pacific Northwest.

Thousand of copies of the magazine "Abroad," published in Europe with special articles on Oregon, have been issued during the past year, and

Better Fruit is printed by us

We arrange and print booklets for growers of fruit, development leagues and others

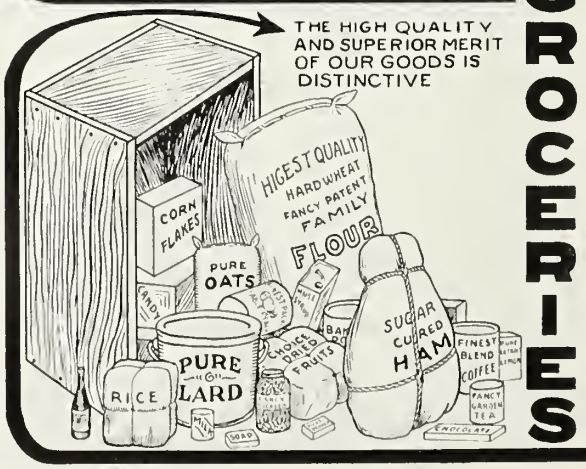
F. W. Baltes & Company
PRINTERS
PORTLAND, OREGON

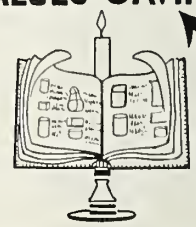
SLOCOM'S BOOK STORE
Office Supplies
Stationery
Ledgers, Journals, Time Books
Memorandum Books
Rubber Stamps
Souvenir Postals Picture Frames

The Hall Drug Store
Eastman Kodaks and Supplies
Souvenirs, Postcards, Stationery, Pyrography Materials
Hood River's Largest and Best Drug Store

W. F. LARAWAY
DOCTOR OF OPHTHALMOLOGY
EYES TESTED LENSES GROUND
Over 30 Years' Experience
Telescopes, Field Glasses
Magnifiers to examine scale
Hood River Oregon and Glenwood Iowa

LET US SEND YOU SAMPLES OR FURNISH ESTIMATES FOR ATTRACTIVE
FRUIT CASE LABELS
WRITE Schmidt LITHOGRAPH CO.
408 WELLS FARGO BLDG.
PORTLAND, ORE.
A POSTAL CARD WILL BRING OUR SAMPLE BOOK OF STOCK FRUIT CASE LABELS

ORDER FROM THE JONES MERCANTILE COMPANY
WHOLESALE AND RETAIL
WRITE FOR CATALOG A. FREE.
OUR CATALOGUE IS THE BOOK THAT LIGHTS YOUR WAY TO THE BEST VALUES & THE BIGGEST SAVINGS
THE HIGH QUALITY AND SUPERIOR MERIT OF OUR GOODS IS DISTINCTIVE


GROCERIES

OUR SPECIALTY
Groceries, the Kind and Where to Buy and Why is Shown to Your Best Advantage by Our New Catalog, the Most Complete of its Kind in the West. Number A. Sent Free on Request.
PORTLAND, OREGON

A Reputation to Sustain

VINELAND NURSERIES COMPANY

Propagators of

RELIABLE NURSERY STOCK

All Stock Budded from Bearing Trees, Fruit and Ornamental

CLARKSTON, WASHINGTON

Montana Fruit Growers
and Others of High Altitude

We recommend an excellent stock of

McINTOSH RED
and
OTHER FRUIT TREES

For Northwest Fruitgrowers in general

A full stock of

Spitzenberg, Jonathan, Winesaps, Rome Beauties, etc.

31 *years in business*

MILTON NURSERY COMPANY
A. MILLER & SONS, *Incorporators*
Milton, Oregon

"THE OLD RELIABLE"

Albany Nurseries

INCORPORATED

ALBANY, OREGON

Large Stock, First Class Trees

Place Your Orders Now
CATALOGUE FREE

MORE SALESMEN WANTED

G. A. Loudenback, Proprietor

The Cashmere Nurseries

FANCY NURSERY STOCK

Grower of

General Nursery Stock

Apples, Pears, Cherries and Peaches a Specialty

All trees propagated from bearing trees in the Wenatchee Valley

We do not employ agents, but sell direct to the planter

WRITE FOR PRICE LIST

ten full pages of the Sunday Oregonian have been devoted to the exploitation of communities which have adopted this plan.

An immense amount of other advertising in various publications throughout the country and in folders issued by the allied Harriman lines have been given communities in Oregon and the Pacific Northwest through this co-operative plan.

The success of the community plan in Oregon led to its adoption in Idaho by the Oregon Short Line. The following communities have adopted the plan in that state:

Boise, Idaho, has two years in succession adopted this plan, and has had 60,000 copies of the community booklet and 45,000 copies of other literature.

Gooding, Idaho, will have 25,000 copies of a community booklet, 20,000 copies of a "primer," and the regular quota of other forms of literature, aggregating 45,000 copies. Total literature for Gooding, 90,000 copies.

Richfield, Idaho, will have 40,000 copies of a community booklet and 45,000 copies af other literature.

Hailey, Idaho, will have 30,000 copies of a community booklet and 45,000 copies of other literature.

American Falls, Idaho, will have 35,000 copies of a community booklet and 75,000 copies of other literature.

Rupert, Idaho, will have 20,000 copies of a community booklet and 55,000 copies of other literature.

Burley, Idaho, has had 10,000 copies of a community booklet, and the other regular forms of literature aggregating 35,000 copies.

Twin Falls, Idaho, has had 20,000 copies of a community booklet and 45,000 copies of other literature.

Buhl, Idaho, has had 10,000 copies of a community booklet and 45,000 copies of other literature.

Pocatello, Idaho, will have 40,000 copies of a community booklet and 55,000 copies of other literature.

Blackfoot, Idaho, will have 40,000 copies of a community booklet and 55,000 copies of other literature.

Idaho Falls, Idaho, will have 40,000 copies of a community booklet and 75,000 copies of other literature.

St. Anthony, Idaho, will have 10,000 copies of a community booklet and 35,000 copies of other literature.

For Idaho as a whole there has already been issued or contracted for under this plan 1,140,000 copies of all forms of literature.

Idaho will have 13,500,000 pages of advertising in Sunset Magazine and 4,500,000 pages of articles in Sunset devoted to that state.

The total amount of literature at this writing issued or to be issued for Oregon and Idaho and for four communities in Washington under this co-operative plan of the Harriman lines is 3,340,000 copies. It is expected, however, that contracts will be made for the publication of at least 2,000,000 copies of literature during 1910 on behalf of Oregon, Washington and Idaho.

This literature would be of little value if it were not properly distributed. The Harriman lines have seven carefully worked out methods of distribution, in addition to those adopted specifically by communities, and it is safe to say that all of this literature is distributed to the best possible advantage.

The cost in all its features of the community co-operative plan in the Pacific Northwest to the Harriman lines during 1909-10 will be close to $850,000. In addition to this expenditure to carry out this very extensive plan of community publicity, the communities themselves will pay about $150,000 toward its execution during the same period. In other words, the Oregon Railroad & Navigation Company, the Oregon Short Line and the Southern Pacific Company, Lines in Oregon, pay about five dollars for every one dollar raised by the communities toward their development.

SALESMAN WANTED

To take our cash weekly selling complete line of fruit trees and ornamental shrubbery

Outfit free

Capital City Nursery Company, Salem, Oregon

AGENTS

Big money made selling our nursery stock; great demand; fine line. Cash commission weekly.

CAPITAL CITY NURSERY CO.
Salem, Oregon

PLANT SIBSON'S ROSES

ROSES for lawns and gardens.
ROSES for fences and porches.
ROSES for arches and pergolas.
ROSES for banks and hedges.

In fact, ROSES for all purposes may be ordered from THE SIBSON ROSE NURSERIES for delivery at the right time for planting.

"ACRES OF ROSES" in splendid quality. The largest exclusive rose specialists in the Northwest.

Office and Nurseries, 1180 Milwaukie Avenue, Portland, Oregon.

TREES TRUE TO NAME
The SILVA-BERGTHOLDT CO. NEWCASTLE, CALIF.
PLACER NURSERIES

FRUIT TREES

ALL STANDARD COMMERCIAL VARIETIES

The best that good care can produce

Write us now concerning your Fall and Winter Planting

AGENTS WANTED

The Silva-Bergtholdt Company
121 Orchard Street Newcastle, California

Quaker Nurseries

We have a large stock of
Yellow Newtown Pippins, Spitzenbergs, Jonathans, Wageners, Rome Beauties
and all of the leading varieties of apples.

We also carry a heavy line of
Bartlett, Comice and Beurre d'Anjou Pears

A general stock of peaches, such as
Early Crawfords, Elbertas, Late Crawfords, Fosters, Tuscan Clings, Muir, Phillips, Early Columbia, etc.

Small fruits in great abundance
Raspberries, Blackberries, Strawberries, Dewberries Gooseberries, Currants, Grapes

C. F. LANSING, Salem, Oregon

THE DALLES NURSERIES

(Successors to R. H. Weber)

GROWERS OF

Choice Fruit and Ornamental Trees, Grape Vines, Small Fruit Plants and Shrubbery

We do not employ Agents, but sell DIRECT to the Planter, making Commercial Orchards a specialty

All correspondence should be addressed to

THE DALLES NURSERIES
122½ Grand Avenue
PORTLAND, OREGON

Remember, our Trees are grown strictly without irrigation

FRUIT TREE STOCKS

BOTH AMERICAN AND FRENCH GROWN

The American are very promising at the present time.

The French are being grown in France on contract expressly for us, and the grading, packing and shipping is looked after by our representative there.

APPLE SEEDLINGS—All grades, straight or branched.

IMMENSE STOCK OF GRAPES—Long on Concords, 1 year, No. 1; also other leading varieties.

CURRANTS AND GOOSEBERRIES—Fine, well-rooted plants.

FOREST TREE SEEDLINGS—COMPLETE ASSORTMENT.

LARGE GENERAL STOCK SEND LIST FOR PRICES

The Shenandoah Nurseries

D. S. LAKE, Proprietor SHENANDOAH, IOWA

J. B. PILKINGTON

P. O. Box 242 PORTLAND, OREGON

Grower and Importer of

FINE NURSERY STOCK, FRUIT, NUT AND ORNAMENTAL TREES, SHRUBS AND ROSES

Have No Agents Direct to Planter Send for Catalogue

WHAT ARE YOU GOING TO PLANT?

Tokays, Cornichon, Muscat or Malagas

We have them, strong well grown one year vines, finest in the land

How do BARTLETTS strike you this season? Plenty of them, stock cannot be beaten, and prices right. Then how's SPITZENBERG, YELLOW NEWTOWN PIPPIN and YELLOW BELLEFLEUR?

One nurseryman visiting our Nursery said, "Gentlemen, you should be proud of this stock," and we are. So will you be when you plant it.

What about CHERRIES? BING, LAMBERT, BLACK TARTARIAN, ROYAL ANNE and CHAPMAN. It would not be hard to sell you these, could you see them.

PEACHES, stocky, well grown, and, say, they have the roots, plenty of them, and not cut off at top of ground.

Another thing: Our prices are RIGHT, we dig our stock RIGHT, handle it RIGHT, treat you RIGHT, and it is sure RIGHT in every way. Write us and we will tell you all about it. Better still, come and see us and we will show you.

CHICO NURSERY CO. Chico, California

Send us your name and address and receive free postpaid this beautiful illustrated catalog, with complete cultural directions.

DIAMOND PORTLAND SEED CO. QUALITY

Your Name_____

Address_____ (No. 201)

Mail to PORTLAND SEED CO. PORTLAND OREGON

PROFESSOR JOHN CRAIG, Cornell University: "Why should men of means and the young men of our country be more willing to go to the Pacific Coast and invest from $200 to $400 per acre in unimproved land, 2,000 miles or more from the great markets of the United States, than to invest a quarter of these amounts in orchard enterprises near the center of consumption and at the gateway of the foreign market? Can we not produce a satisfactory product? Unquestionably, yes. No country under the sun can produce better quality in the apples of New England origin than the soil and climate of New England itself. Then why this apathy at home, this activity in relation to distant lands?"

Our Answer: Because for four hundred years they have grown apples in the Eastern country, which generally sell around about two to three dollars per barrel containing three bushels, and in the Northwest country they grow apples which bring from two to three dollars per box containing one bushel.

◈ ◈ ◈

THE SHERWIN-WILLIAMS COMPANY, 601 Canal Road, Cleveland, Ohio, probably have the reputation for manufacturing the best line of paints for house painting of any concern in America. They are certainly progressive people—one of the most progressive houses in existence. They have gotten out a number of booklets which will be of great value and prove very interesting to our orchard subscribers who are thinking of painting their old house or painting the new one. One is a little booklet, "Paint Varnishes for the Home," another "Paints and Varnishes for the Farm." All are beautiful and very valuable to any man who is expecting to do painting of any kind, but even more attractive than these booklets is one entitled "Shingle Effects," which gives some splendid suggestions and valuable information for the home, but the best of all these, in our opinion, is one entitled "Ideal Plan of Home Decoration," which shows the color scheme and artistic arrangement from every point of view for the decorating, not only of the model home, but of every room in the house. We strongly urge any of our readers to send for these booklets. We also wish to say that what Sherwin-Williams makes is guarantee of quality. They make arsenate of lead spray, which has been used by a great many fruit growers in the Northwest and splendid satisfaction has been given.

True-to-Name Nursery

OFFERS TO PLANTERS

Desiring strictly first-class one-year-old trees grown on No. 1 whole roots, a few thousand apple, pear and cherry of the leading varieties adapted to the Pacific Northwest. We make a specialty of growing Yellow Newtown and Spitzenberg and personally select all buds and scions from bearing and tested trees. Order now for fall 1909; get trees guaranteed "true to name," and avoid future disappointment. Address

H. S. GALLIGAN

Hood River, Oregon

Phone Home 2002K *Catalogue on Application*

PORTLAND WHOLESALE NURSERY COMPANY

Rooms 1 and 2 Lambert-Sargeant Building

Corner East Alder Street and Grand Avenue

PORTLAND, OREGON

RICHLAND NURSERY

Richland, Washington

FRUIT TREES

Complete stock of leading varieties of Apples, Pears, etc.

WRITE US FOR PRICE LIST

TREATISE ON COMMERCIAL APPLE CULTURE

GEORGE STEWART, NEW PLYMOUTH, IDAHO

I HAVE watched the apple market for the past twenty years and have never yet seen the time but that you could sell good apples at a good price, for the apple is a fruit that people have to have the same as they have to have flour, meat and potatoes, and other foods. I think there is no fruit so healthful as apples, and if more of them were used I am satisfied there would be fewer doctor bills to pay.

I have been asked a great many times since being here if I thought this a good apple country, and I want to say that I believe it is, and I think there is none much better, especially the mountain varieties grown at an altitude of from 2,000 to 3,500 feet, such as the Jonathan, Rome Beauty, Grimes Golden and Wagoner, and several other varieties, Jonathan at the head of the list. If I was planting out an orchard I would plant nearly all Jonathan, and if I used fillers I would use Wagoners, for the Wagoner is a very small tree and several crops could be raised before it would have to be cut out to give room for the other apples. Of course you would have to plant some other variety, such as the Grimes Golden, Rome Beauty, or Stayman Winesap, so as to have enough for fertilizing purposes after the Wagoners were cut out.

I say I would plant the bulk of my orchard in Jonathan for they seem to be the natural apple for the mountain country, and there is no mistake but what they are the most steady and prolific bearer of any apple in that class. The tree makes a good growth and is of

Ten Carloads *of* Apples Wanted

We will require this season ten carloads of extra fancy apples of the following varieties:

DELICIOUS (true Stark Delicious) KING DAVID (true Stark King David) STAYMAN WINESAP BLACK BEN, etc.

Please quote on the quantity and grade you can supply, f. o. b. cars at your point.

Stark Bro's Nurseries & Orchards Company
Louisiana, Missouri U. S. A.

Seeds, Trees, Bulbs, Shrubs

True Healthy Stock of HIGHEST QUALITY

Our Catalogue tells all. Send today

Routledge Seed & Floral Co.
169 SECOND ST. PORTLAND, ORE.

Northwest Nursery Company
North Yakima, Washington

GROWERS OF

YAKIMA VALLEY IRRIGATED FRUIT TREES

We cut our Scions and Buds from fully tested bearing trees
We have a complete stock of all leading commercial varieties

Write for full information before placing your order

NORTHWEST NURSERY COMPANY North Yakima, Washington

To Oregon and Washington

PLANTERS

WE have a beautiful block of one-year Spitzenbergs and a fine line of one and two-year pears, which we desire to call your attention to. Please submit your list and we will make prices that will interest you.

Davis Co. Nurseries
Roy, Utah

The Wapato Nurseries
TIM KELLY, *Proprietor*

Sales Office: North Yakima. Nursery and Business Office: Wapato, Wash.

1,500,000 Fruit Trees *1,500,000 Fruit Trees*

WE BELONG TO NO TRUST

We guarantee our trees absolutely true to name. Our stock has been "the standard of excellence" wherever placed. Our system of budding and grafting, and the admirable location of our nurseries, together with our long experience in California and other Western states in planning and planting orchards, makes our advice invaluable to beginners and to those who contemplate commercial orchards. See us

Get our Prices. Remember the Best is Always the Cheapest

420 Acres Devoted to Nursery Purposes

THE WOODBURN NURSERIES

Established 1863 by J. H. Settlemier

Grower of Choice

Nursery Stock

F. W. SETTLEMIER

Woodburn, Oregon

Fruit Trees

APPLES, PEARS, PEACHES
CHERRIES, PRUNES

A fine lot of the best varieties, all true to name. Send your want list for prices.

W. C. Hopson Milton, Oregon

Buy only selected home-grown Trees, free from pests and root diseases. Trees do not improve by long shipment and exposure.

TREES

N. J. DAMON, North Yakima, Washington

Office: 111 East Yakima Avenue Residence: 6 South Sixth Street

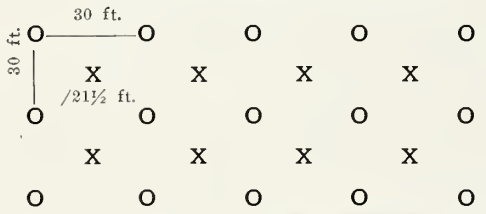
Dealer in

STRICTLY FIRST-CLASS NURSERY STOCK

Office Phone, 41; Residence Phone, 917

Every tree guaranteed "Home-Grown"

A GOOD WAY TO SET TREES



Call and get prices and terms. Years of experience enables me to advise what varieties to buy and how to plant.

Apples at "O" are 30 feet apart; peach, pear or Wagner apple "fillers" at "X" are 21½ feet from apple trees.

very tough wood. When all other apples are a drug on the market there is always a demand for the Jonathan at a good price. There is just about the same demand for Grimes Golden and Rome Beauty, but the Grimes Golden is naturally a small apple and consequently doesn't fill so many boxes, and being a yellow apple, does not ship so well. No yellow apple ships so well as a red, as it shows all blemishes too plainly. And the Rome Beauty—the tree does not make such a good one as the Jonathan, as it is an upright grower and hard to spread out, and neither does it make so good a growth.

Now, as to the planting of an orchard. First, get your ground in good shape, the same as for a crop of any kind. When ready to plant your tree, first see that all broken or bruised roots are clipped off, and make the hole to set it in large enough that the roots remaining will not be cramped nor crowded, and set it from an inch to two inches deeper than it was in the nursery. You must be careful to plant them to line up both ways. The best way I have always found was to plant them by a wire—on the same principle as a check rower in a cornfield. In regard to the distance apart of each tree, I have always planted them thirty-two or thirty-three feet one way by sixteen and a half feet the other, and then when the trees got so large that they interfered with each other the short way, cut each alternate one out, then you have an orchard with the trees thirty-three by thirty-three feet each

DO YOU WANT

Trees of Quality?

You are either not interested in "Trees of Quality," or you have not investigated for yourself what The Winfield Nursery Company is doing in the horticultural world.

Our booklet, "Trees of Quality and What Others Say of Them," illustrates our system of breeding up and selecting the best. It further tells of the big commercial planters' experience with The Winfield Nursery Company's trees in irrigated districts.

Best Scions from Your Own Country

Do you know we now have men in your locality visiting the best orchards to mark them, showing improved individuality from which to select scions? Mail coupon at once.

The Winfield Nursery Co.

Incorporated

J. Moncrief, *President* Winfield, Kansas

COUPON

I am interested in "Trees of Quality" and will plant about_____ trees. Mail free of charge your booklet.

Name _____

Post Office _____

State _____

Hood River Nurseries

Have for the coming season a very complete line of

NURSERY STOCK

Newtown and Spitzenberg propagated from selected bearing trees. Make no mistake, but start your orchard right. Plant generation trees. Hood River (Clark Seedling) strawberry plants in quantities to suit. **Send for Prices**

RAWSON & STANTON, Hood River, Oregon

Buy and Try

WHITE RIVER FLOUR

MAKES

WHITER, LIGHTER BREAD

way. The tree you cut out is of no expense to you, only the first cost of planting and a little pruning and spraying up to the time it begins to bear, and you can get from eight to ten crops off it before it has to be cut out—that depends upon the growth of the tree.

As to starting your tree. I notice that most everyone here has started them very low. I think most of them have gone to the extreme. I would not start a tree lower than between two and a half and three feet from the ground, for you must remember that you have to work in an orchard with a team the same as in a crop of corn, and besides, I think it was originally intended for apples to grow on a tree instead of a bush. Some people say that by high heading your tree is too tall, which makes it bad for picking the fruit and for spraying. That is not so, for by proper pruning the tree will be no higher in the air, and it will be better and look much better, and have but one trunk, while a tree topped eighteen inches from the ground will necessarily have between three and four. It has to be just so high anyhow to get near it with a team. When you get your trees from the nursery the nurseryman will tell you they are already headed. Some of them are, and some are not. Some are headed eighteen inches from the ground, and some three and four feet—some with the branches all on one side—some with three times too many branches on. When an orchard is planted it should be all newly headed.

Carlton Nursery Co.
CARLTON, OREGON

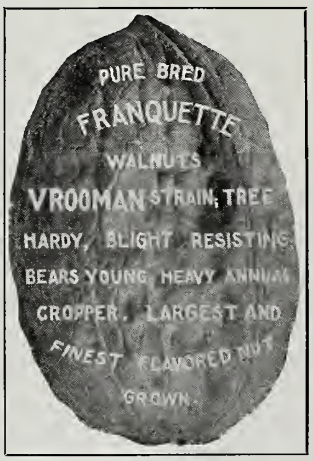
Growers of a complete line of nursery stocks. Apples, pears, cherries, prunes, walnuts, plants, etc. Satisfaction guaranteed. We are suppliers of commercial plantings. Before placing your orders **be sure** and send list of your wants, asking for quotations, as we know we can interest you.

Catalogue upon Application

LAYRITZ NURSERY
Victoria, British Columbia

Headquarters for choice nursery stock in British Columbia. Apple, pear, plum, cherry and peach trees and small fruits, also ornamental trees, shrubs, roses, evergreens, etc. The largest and best assorted stock in British Columbia.

PRICES ON APPLICATION



Grafted Walnut Trees
of the
VROOMAN PURE BRED FRANQUETTE

variety. We have for this fall and next spring delivery the finest block of Grafted Walnut Trees ever grown on this Coast. Heretofore our supply has not warranted advertising them, but this year our supply is larger—but not nearly large enough. For hardiness, productiveness and quality the VROOMAN FRANQUETTE stands unsurpassed. We guarantee these trees true to name. Order early to insure delivery. Address

Oregon Nursery Company
ORENCO, OREGON, Via Hillsboro

More Successful Salesmen Wanted

Yakima Valley Nursery Co.

NORTH YAKIMA, WASHINGTON

Nurseries at Nob Hill and Wapato. Stock grown on the finest land in the Yakima Valley by experienced men who know their business. A splendid assortment of the commercial staples. Clean, hardy trees grown in nature's garden from pure bred scions and under the most favorable conditions. Not how cheap, but how good. You may find trees at less price, but if it's real worth you want, see us.

OFFICE
CLOGG BUILDING
NORTH YAKIMA, WASHINGTON

Send for Catalog *Agents Wanted*

Seeds

THE KIND YOU CAN'T KEEP IN THE GROUND

They grow, and are true to name.
Write for prices on your wants.

188 Front Street **J. J. BUTZER** Portland, Oregon

Poultry Supplies, Spray, Spray Materials. Fruit Trees, Etc.

Russellville Nursery Grows Trees of Quality

ACKNOWLEDGED BY MANY LEADING NURSERYMEN AND FRUIT GROWERS TO BE THE BEST GROWN ON THE COAST

For commercial orchards we quote the following: 100,000 apple, 50,000 cherry, 50,000 pear and other stock in proportion. Thirty acres of ornamental trees. See our stock and get prices before buying elsewhere. No agents.

Mention "Better Fruit" **H. A. LEWIS, Proprietor, Montavilla, Oregon**

FRUIT GROWERS, YOUR ATTENTION!

Royal Ann, Bing and Lambert cherry trees; Spitzenberg and Newtown apple trees; Bartlett, Anjou and Comice pears, and other varieties of fruit trees

A. HOLADAY MONTE VISTA NURSERY SCAPPOOSE, OREGON

OUR TREES ALWAYS PLEASE

Satisfaction guaranteed

A NICE ASSORTMENT OF COMMERCIAL VARIETIES

Prompt attention given to mail orders

SELAH VALLEY NURSERY CO. R. F. D. No. 2, Selah, Washington

If you are going to head them three feet from the ground, those that are already headed lower than that, cut all the branches off to the main one and clip it back to three feet above the ground, thus starting a new head. Those that are already headed the right distance from the ground, clip off all the branches but three or four. Divide them so there will be equal weight on each side, then clip them back one-half to two-thirds of their growth. The most important thing in heading a tree is to guard against forked crotches, and wherever you find one, cut it out by all means, for if you do not, it will split down as soon as it bears a load of fruit, and will probably ruin your tree. In the second year, if the top does not suit you, you can cut it all off again and start a new top. It will not injure the tree. I have cut tops off the third year after planting, to the bare stalk, and I had just as much of a tree when five or six years old as those that had not been cut back, and in many instances, a much better top.

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Portland, Oregon, October 1, 1909.

Better Fruit Publishing Company.

Gentlemen: We are very glad, indeed, to say that our results from the advertising carried in "Better Fruit" were extremely good. Our replies came from Maine on the East, to Japan and Corea on the West.

The cost per inquiry was low and percentage of sales high.

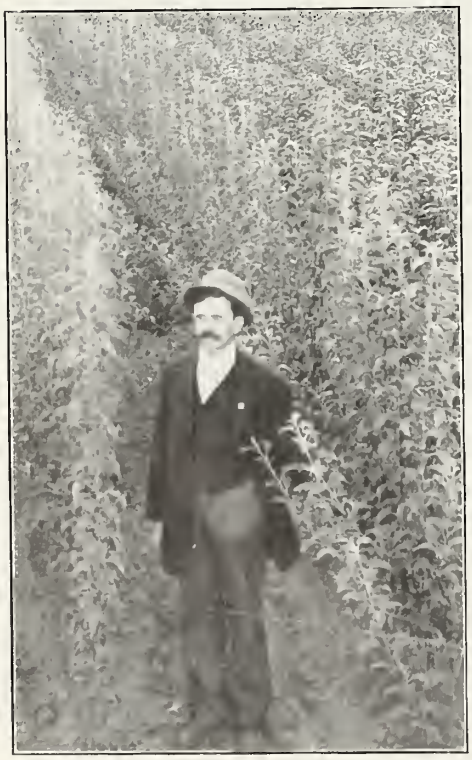
We shall continue to advertise with you, as we feel that your past performances are good.

With best wishes for your future success, we are,

Yours very truly,

The Hardie Manufacturing Company,
Per H. R. Letcher.

The SUNNYSIDE NURSERY COMPANY



Retail and Wholesale Nursery

To make a success of the nursery business there are a number of vital points to consider:

POINT 1—A SUITABLE LOCATION
POINT 2—BUSINESS ABILITY OF MANAGEMENT
POINT 3—EQUIPMENT FOR HANDLING STOCK
POINT 4—GOOD STOCK AND HONEST DEALING

Point 1—We are located in the great fruit belt of Washington, where the long growing season, bright sunshine and deep, well drained soil enable us to grow the best tree, from point of size, smooth body, free from fungus, and best rooted trees in the world.

Point 2—F. K. Spalding, president of the company, has had years of experience as salesman and grower; W. S. McClain, secretary, a specialist in orchard work; Harry K. Spalding, vice president, a law graduate and competent office man and salesman; George Emmert, treasurer, expert bookkeeper, former graduate and teacher of commercial work; J. H. Mann, field foreman, one of the most skilled nurserymen in the West—foreman for years for J. C. Hale of Tennessee.

Point 3—We have a well equipped six-room office, large packing house, large packing ground, with three hundred feet of railroad frontage. Electric lights, making it possible to work a day and night force in packing season.

Point 4—We use scions from best fruit orchards, true to name; do not spare money or labor to make good our claim as leaders in honest, clean nursery stock.

AWARDED THE GOLD MEDAL FOR BEST NURSERY STOCK ALASKA-YUKON-PACIFIC EXPOSITION, SEATTLE, 1909

Write for Catalogue and Prices MAIN NURSERY AT SUNNYSIDE, WASHINGTON

The Largest Plant of Commercial Fruit Trees in the Northwest

A STRONG STATEMENT, BUT ONE THAT IS BORNE OUT BY THE FACTS

ONE-YEAR APPLE GRAFTS, OCTOBER 1, 1909

We have had visitors at our nursery this season from all portions of the country. Among them were nurserymen from East and West, planters, real estate men, and practical men from all walks of life. One might fool some one of these men, but it would be particularly difficult to fool a competing nurseryman, and when some of our Eastern nurserymen, who, by the way, saw all the large plants both East and West, tell others that "the Washington Nursery Company has the largest and finest commercial plant seen west of the mountains," there must be something to it.

Two and a Quarter Million Fruit Trees **Two Hundred and Fifty Acre Plant**

THE ABOVE TREES DO NOT INCLUDE OUR ENORMOUS PLANT OF PEACH, PEAR, CHERRY, APPLE AND OTHER SEEDLINGS BUDDED FOR 1910 TREES

Yakima Valley Trees

Are in our honest opinion superior to trees grown anywhere on the continent.

The rare combination of exceedingly fertile soil, moisture to apply when needed, long growing season, and splendid fall weather for ripening of stock is remarkably in our favor.

Yes, nature has been kind to us, but nature won't do it all.

Soil, water, sunshine would develop big tops with a third the work we put on our trees.

But the roots.

There's where the real work comes. Water and plenty of it tempts many to let nature go, and to neglect cultivation, which latter is the only way to develop the root system—the life of the tree.

Visit our plant early or late and you will always find hard, persistent work going on. How many times do we cultivate? We couldn't tell you if we tried; we never stop till digging time. Costs money? Try it and see.

The root tells the tale today.

The tree four or five years hence loaded with fruit proves our claim. There's a difference in trees.

You pay the price and take your choice.

From Grower to Planter

When you buy our trees you get them at first hand. We have a personal interest in seeing that you get just the kind and class of stock ordered. We have thoroughly organized growing, selling and delivery departments, and we give your orders the personal attention they must have if you expect satisfaction.

It's important to you to know that your stock passes through as few hands as possible. Many nurseries are heavy dealers, buying and selling stock of numerous small growers.

The nursery company which grows large lots of trees and sells direct to the customers through its own agents has a distinct advantage, and purchasers are assured of satisfaction—provided the company is dependable.

Our Mr. McDonald has done nothing else than grow trees for the last eighteen years. He has entire charge of our growing department. This company has since 1903 been growing stock on the Yakima reservation and selling trees direct to the planter. The enormous trade built up and the tens of thousands of satisfied customers all over the Northwest is proof of our satisfactory dealings.

ASK FOR CATALOG IF OUR SALESMAN FAILS TO SEE YOU DROP US A LINE

WASHINGTON NURSERY COMPANY

Salesmen Everywhere—More Wanted **Toppenish, Washington**

Medford Spray Co.
MEDFORD

Oregon Spray Co.
PORTLAND

Hood River Spray Mfg. Co.
HOOD RIVER

These Factories Make and Distribute the Famous

NIAGARA
Lime-Sulphur Spray

The leading fruit growers and fruit growers' associations of the Northwest use NIAGARA exclusively

There is a Reason Why

NIAGARA is made under special process originated by ourselves. The only known process by which is made a permanent, clear and reliable solution of lime and sulphur of sufficient strength to meet all requirements

Write for Further Information

Wherever Fruit Excels NIAGARA SPRAY *is Used*

HORTICULTURAL MEETING

Spokane, Washington, September 21, 1909.

Dear Sir: On behalf of the executive committee of the Washington State Horticultural Association and board of trustees of the National Apple Show, we desire to extend to you a most cordial invitation and urgent request to attend a convention of Northwest apple growers, apple shippers, refrigerator car men and box manufacturers, at Spokane, Tuesday, November 16, for the purpose of considering the provisions of the Lafean apple package and grading bill introduced in the special session of congress last winter.

This bill is designed, we believe, to favor private interests, and if enacted much harm to the fruit industry of the Pacific Northwest will result. The fame of the apple business of the Pacific Slope and inter-mountain region of the great West has become world wide, and while the superiority of our apple is conceded, much of this fame is due to the manner in which this staple fruit product is prepared for market. We refer to the standard box, which contains a little more than a (Winchester) bushel, the standard dry measure of the United States. Uniformity in package and grading is desired, but we contend that the apple growers who are box users have something to say, and should be heard, on this important matter.

You are, therefore, urged to attend this conference. The meeting will be held in the G. A. R. Hall of the Armory Building at Spokane, beginning Tuesday, November 16. First session at 10:30 a. m. If business engagements prevent your attendance, please write, giving us your views regarding the standard apple box, and whether, in your judgment and experience, the present standard should be maintained or a new standard adopted. Concerted action at this time is imperative, as it will have great weight in molding public opinion, and thus arouse and influence Western congressmen.

Very truly yours,
L. G. Monroe, Secretary,
Washington State Horticultural Association.
Ren H. Rice,
Secretary and Manager National Apple Show.

◇ ◇ ◇

UNITED STATES DEPARTMENT OF AGRICULTURE, BUREAU OF ENTOMOLOGY
Walnut Creek, California, September 27, 1909.

Mr. E. H. Shepard, Editor "Better Fruit."

Dear Mr. Shepard: I have recently received a copy of the Packing Special (September edition) of "Better Fruit." It is an excellent treatise on the subject and will, I am sure, be of much interest and value in all fruit-growing regions.

Very truly yours,
S. W. Foster.

Hemingway's

ARSENATE OF LEAD

A Perfect Product
Properly Packed
Honestly Priced

Guaranteed to meet the requirements of the various State Agricultural Authorities

For Coast Prices and Supplies
Address the Agents

KERR, GIFFORD & CO.
Portland, Oregon

Stranahan & Clark
DEALERS IN
Commercial Fertilizers
Land Plaster, Lime
Plaster Paris, Cement
Building Plasters
HOOD RIVER, OREGON

SEND NOW FOR
LILLY'S BEST
POULTRY BOOK
THE EXPERIENCE OF 20 YEARS
A CATALOG
A GUIDE
THE CHAS. H. LILLY CO. SEATTLE PORTLAND

You Don't Want Your Orchards To Look Like This.

Now is the time to make preparations for the proper treatment of San Jose scale. *Sherwin-Williams Lime-Sulfur Solution* is a safe and effective spray for San Jose scale and the time to take this pest in hand is before the trees and shrubs become badly infested.

Trees which had but a trace of scale in the spring may be badly infested and need spraying by fall. Now is the time to get ready for business. Trees may be sprayed for San Jose scale with *Sherwin-Williams Lime-Sulfur Solution* from ten days after the foliage has dropped and the trees enter their dormant stage in the fall, up to the time the buds open in the spring. As a rule the weather is more favorable for spraying in the fall. Badly infested trees often require two applications in a year before being thoroughly cleaned up.

Sherwin-Williams Lime-Sulfur Solution is a clear, cherry-colored liquid, which on account of being thoroughly filtered and clarified does not contain any sediment. Works perfectly in spray pumps and is used cold with splendid results.

N.B.—If you are at the National Apple Show at Spokane, Wash., Nov. 15-20, visit our booth. You will be most welcome.

THE SHERWIN-WILLIAMS CO.
MANUFACTURERS OF HIGHEST GRADE INSECTICIDES AND FUNGICIDES.
FACTORIES: CLEVELAND, CHICAGO, NEWARK, MONTREAL, LONDON, ENG.
SALES OFFICES AND WAREHOUSES IN 28 PRINCIPAL CITIES. 6
707 Canal Road, CLEVELAND, OHIO

"LION BRAND" TRADE MARK Spraying Materials

LION BRAND
Is the stamp of purity, strength and Uniformity in insecticides
We make more insecticides than any other manufacturer in the United States, and Blanchard's "LION BRAND" is the standard on four continents.

BLANCHARD'S
LION BRAND BORDEAUX MIXTURE
Made by us for over twenty years, and guaranteed to contain nothing but purest and most effective ingredients. One gallon to forty-nine of water.

BLANCHARD'S
LION BRAND PARIS GREEN
We are the only independent makers of Paris Green. Lion Brand is sold in every state in the Union. There is a reason—Lion Brand is pure and strong, contains not a particle of filler or adulterant, nothing but purest Paris Green.

BLANCHARD'S
LION BRAND ARSENATE OF LEAD
Unequaled by any, anywhere, at any price. The Lion Brand is backed for purity and strength by our manufacturing reputation of nearly a quarter of a century.

LION BRAND
Insecticides are on sale in every state. If you cannot get them handily, write directly to us and we will see that you do. Send for
Blanchard's Spraying Booklet
It is free to any one who is interested and contains much invaluable information for the fruit grower and trucker.

The James A. Blanchard Co.
610 Hudson Terminal Building
NEW YORK CITY, N. Y.
PORTLAND SEED CO.
Local Agents *Portland, Oregon*

When you get to Hood River stop at the

MT. HOOD HOTEL

Trains stop directly in front of hotel. Bus meets all boats

Automobile service daily for Cloud Cap Inn during months of July, August and September

MEETING OF THE NATIONAL HORTICULTURAL CONGRESS

The second annual meeting and exposition of the National Horticultural Congress will be held in Council Bluffs, Iowa, November 15-20, 1909. The sole purpose and object of this congress is the betterment of horticulture in all its branches —fruits, flowers, vegetables and nuts. Our organization for 1909 is perfect in all respects. At the present time forty-one states are actively represented and we will have large exhibits from most of them. The railroads of the country are also with us.

The management of the 1909 exposition will give $35,000 in cash, trophies and valuable merchandise premiums to its exhibitors. Our experience last year taught us that trophies are very much more preferred than either cash or merchandise as premiums.

Your publication is one of the most influential in the field of agriculture and horticulture, and you will naturally take a deep working interest in the advancement of all interests represented.

We would be greatly pleased to have your paper represented, either by yourself or otherwise, at our exposition, assuring you the courtesies of the press. If you so desire, we will furnish you a booth for your use in promoting the interests of your publication while here.

We would like to take this matter up with your business manager at once, as we desire to have the trophies given on exhibition in as many of the leading cities as may be possible, prior to the exposition.

We will soon have out our preliminary premium bulletin and we would like to make mention therein of the trophy donated by you.

Hoping to hear from you soon, and trusting that you will conclude to think as we do with reference to this matter, we are,

Yours very truly,

National Horticultural Congress.

By Freeman L. Reed, Superintendent.

STATE VICE PRESIDENTS

Colorado—Dr. A. E. Miller, Austin; B. S. Ruddick, Paonia. California—A. R. Briggs, San Francisco; Geo. C. Roeding, Fresno. Idaho—N. S. Miller, Caldwell; A. E. Wood, Payette. Montana—F. Whiteside, Kalispell. Oregon—E. H. Shepard, Hood River; J. W. Perkins, Roseburg. Utah—Hon. Thos. Judd, St. George; Dr. E. D. Ball, Logan. Washington—B. M. Chapman, Cashmere; J. P. Cummings, Spokane.

All Fruit Growers

Make Their Headquarters at

The Portland

H. L. Bowers Manager Portland, Oregon

THE HEALING STRENGTH OF MINERAL WATERS

IN CASES OF DYSPEPSIA, RHEUMATISM, GOUT AND NERVOUS BREAKDOWN IS MARVELOUS

Upon recent investigation by eminent physicians, chemists and scientists it has been demonstrated that natural, earth-flowing, mineral waters are the most beneficial means for the cure of organic maladies.

Paso Robles Springs are at this time the point of interest to most investigators, as recent occurrences have attracted the attention of the thinking world to these springs.

One of their chief points of interest to medical men is said to be that which proves that a pre-eminent chemical action rests in the waters which flow from the earth at Paso Robles, California. These waters are superior to those of Carlsbad, Baden Baden and Kissinger in Europe, and come from the earth in natural hot and cold springs.

Paso Robles is making cures daily of rheumatism, gout, stomach trouble, neurotic diseases, kidney trouble and general breakdown, which proves almost beyond question of doubt to medical men that there is some quality in these waters superior to any in this country and probably in the world.

It is also claimed for Paso Robles that the air conditions are perfect. It lies in a small valley protected by mountain ranges; is 720 feet above sea level, and is not assailed by too much sea moisture or an abnormal temperature from the hot land winds.

This air condition is thought by some to have almost as much to do with its cures as the waters themselves.

Men and women from all over the world are daily visiting Paso Robles. They represent the rich and the poor, in fact, there is no quality of mankind not represented among the pilgrims to these waters.

The town, like all health resorts, is filled with boarding houses of all kinds, so that every purse will be pleased. There are hotels for the rich, where any luxury may be had. Private baths for exclusive patrons who wish to be to themselves.

These springs have been known for centuries, for they were used by the Indians to cure their sick, and later the Franciscan fathers performed wonderful cures here, but it is only recently that the really marvellous powers of these waters were made known to the world at large.

Each day brings sick people unable to assist themselves, and every train takes persons away who are cured of maladies which, when they came to Paso Robles Springs, were called incurable.

Every known form of organic trouble is successfully treated at these springs, for the town authorities welcome all except those who have tuberculosis or unclean diseases. For the man who suffers from overeating or from alcoholic excesses there is nothing in the world to equal a week spent at Paso Robles. It straightens him out with a rapidity that is wonderful, and the best recommendation is that they do away with the nerve-craving for stimulants, because of their peculiar soothing effects upon the nervous system. To this reason alone is attributable their great reputation and success as a place for the cure of all nervous diseases of women.

Truly speaking, the study of Paso Robles Springs is one which is giving the medical fraternity abroad and at home much interest and is probably directing more attention to California than any other of her natural gifts to man.

For more complete information address

WM. M'MURRAY, General Passenger Agent of O. R. & N. Co. and S. P. Co., Lines in Oregon, Portland, Oregon

Or the Management of the Paso Robles Hot Springs, Paso Robles, California

SHIPPERS, ATTENTION!

LARGE SHIPPERS—You are respectfully asked to join the PRODUCE REPORTER COMPANY. The value of a membership can hardly be measured in dollars and cents, but you may save or make enough more upon even one car during the season than your membership dues will cost for a year. This is a broad assertion, but one that is easily proved. Shippers in the Northwest who have tried it will testify to the correctness of this statement. If you will give us a chance we will send you their names and our literature. The Northwest is noted for the wide-awake, progressive character of its fruit growers and shippers, and they take to our proposition like ducks to water.

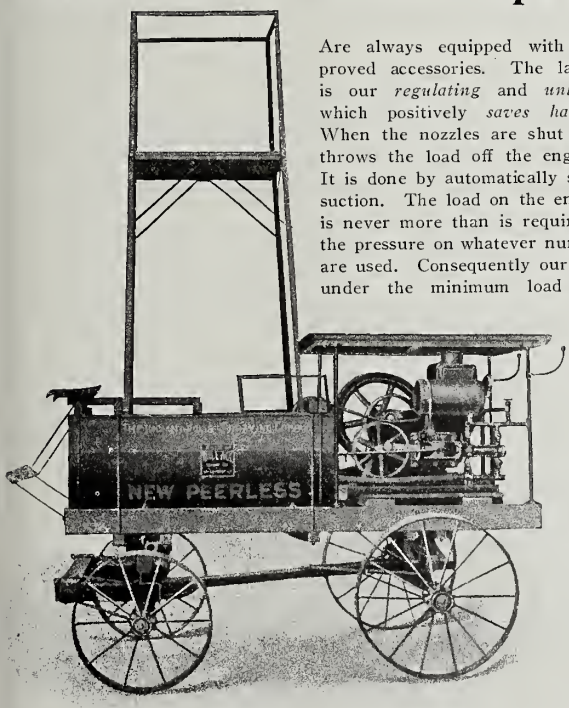
ASSOCIATIONS—The organization of producers into **local** associations has proved profitable. Many new associations are springing up, and all of them recognize the cardinal principle of co-operation. This, coming to its legitimate conclusion, involves the joining of a great **national** organization. This is what the PRODUCE REPORTER COMPANY is. It is the only one. It is a demonstrated success. To be outside of it is to be at a disadvantage with your competitors. To be a member is to be kept informed up-to-date upon the business methods and daily history of firms who are now, or will soon be, wanting to deal with you. You do not care how much money they have, as some of the richest are the biggest robbers. What you want to know, and this organization is the only one that can tell you, is **how they treat their customers.** As they have treated others, presumably, they will treat you. So much for that point. Here is another. With the best management, between the best of firms, there will at times arise differences which require immediate, experienced assistance of a disinterested agency, capable of, and disposed to, look after and protect the interests of the members, treating both parties fairly, and impartially insisting upon the fulfillment of the contract. This is one of the features that has made the PRODUCE REPORTER COMPANY famous.

CONCLUSION—At least you ought to know all about this proposition, and what it pretends to do for shippers. You are behind the times if you do not learn about it. Write today for booklet.

PRODUCE REPORTER CO.

34 South Clark Street CHICAGO, ILLINOIS

American Power Sprayers



Are always equipped with the most improved accessories. The latest thing out is our *regulating* and *unloading device,* which positively *saves half the power.* When the nozzles are shut off this device throws the load off the engine and pump. It is done by automatically shutting off the suction. The load on the engine and pump is never more than is required to maintain the pressure on whatever number of nozzles are used. Consequently our machines work under the minimum load all the time, instead of under the maximum load, as others do.

New Peerless Mounted

Our New Peerless Sprayer shown above was the wonder of the National Apple Show, Spokane. It maintained a constant pressure of 200 to 220 pounds with less than half the usual power. Better get informed about this. The device is applicable to all kinds of sprayers.

AMERICAN SPRAYER CO.
Minneapolis, Minnesota

THE COLORADO NATIONAL

APPLE EXPOSITION

Denver Auditorium

January 3 to 8, 1910

Invites the

Northwest Apple Growers

To exhibit at, and attend the event

BIG PREMIUM LIST
AND COMPETITION OPEN
TO THE WORLD

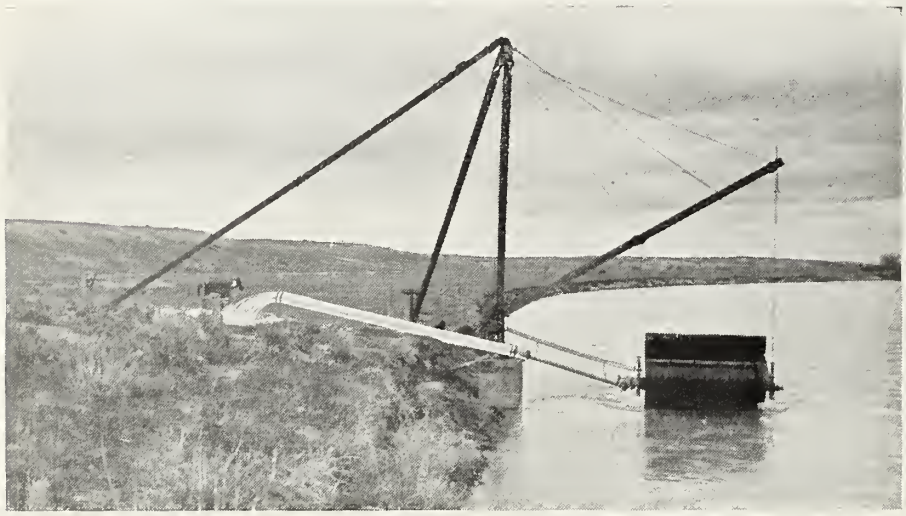
For further information address

CLINTON L. OLIVER, Secretary

1725 Stout Street **Denver, Colorado**

The Pneumatic Water Lift

placed in your stream with sufficient current will raise any amount of water to any height, for which the special machine is made, without cost after installation



Strongly protected by U. S. and Foreign Patents, also applications for improvements

Derrick *and* Water Lift in Active Operation

The above photo shows our pneumatic water lift discharging 480 gallons of water per minute through a six-inch pipe, twenty-four feet high. This machine is installed in a current having a velocity of three and one-half miles per hour. If installed in a current having a velocity of five miles per hour will deliver 1,000 gallons per minute to a height of twenty-four feet, or enough water to irrigate 160 acres of land. We build machines to raise any amount of water to any height.

SYNOPSIS OF AGREEMENT

The Pneumatic Water Lift Company binds itself to manufacture and install a machine on any stream having a current of two miles or more per hour, and to lift the quantity contracted for to the height and in the quantity agreed, and to operate a sufficient length of time to prove every compliance with contract, and if the company fails in any particular it will remove the machine without any cost whatsoever to the purchaser.

Pneumatic Water Lift and Land Company.
By J. T. Rorick, President.

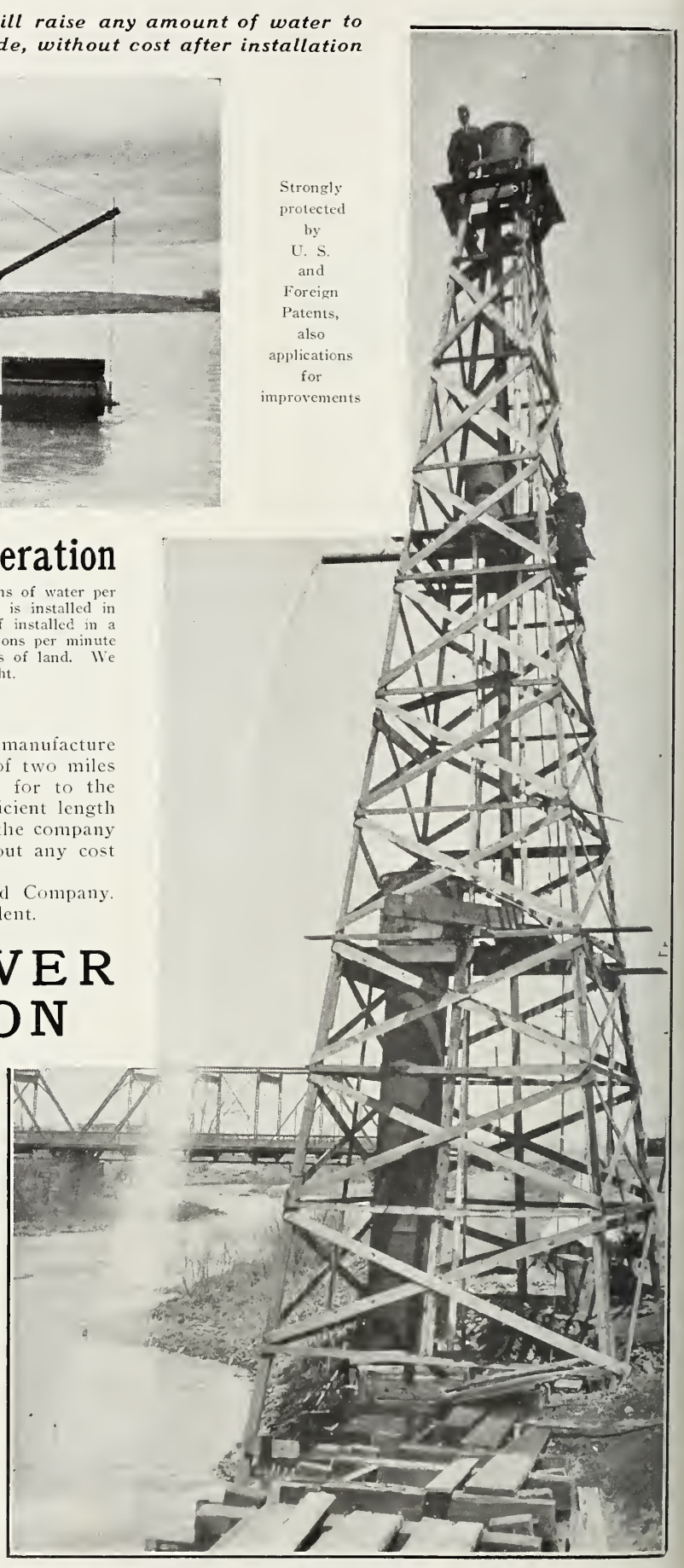
PNEUMATIC POWER REVERSE SIPHON

The photographic reproduction of what is termed a reverse siphon. To enlighten the reader on the working intricacies or water-lifting principles is not the writer's province or power. It is the invention of a young graduate from the School of Mines and Hydraulics in the University of Wisconsin. It is a siphon, and is without a single working or moving part. It is a contradiction and antipode of the siphon principle. The simple siphon discharges liquid from an outlet lower than the intake when a vacuum has been created. The reverse siphon discharges water from an outlet higher than the intake, and to any height for which it may be specially constructed. Automatically it produces its own vacuum, and by the same automatic principle, should it ever accidentally suspend, it must directly resume action. The working principles are too intricate and complex for descriptive narration, but, like the pneumatic water lift, it works and it is wonderful. The reverse siphon can only be operated where a fall of four feet or more can be obtained, but where it can be installed it is at once the cheapest, most durable and inexpensive device for lifting water that has ever been constructed. The reverse siphon is a part of the company's holdings, and a large machine has been ordered for installation near Klamath Falls

Manufactured by

The Pneumatic Water Lift and Land Co.

The Dalles, Oregon



PNEUMATIC POWER REVERSE SIPHON

THE LEWISTON, IDAHO, IRRIGATING SYSTEM

Contrary to the popular notion, the science of irrigation is one of the very oldest factors in producing civilized mankind. In Asia Minor, that birthplace of civilization which rose, flourished and decayed before the dawn of history, irrigation was well understood. Of these civilizations nothing is left, not even a stone-cut hieroglyphic, but the story of that day may be read in the all but obliterated excavations of prehistoric water ways.

Nor should it be fancied that modern enterprise and engineering skill has as yet served to outdo the ancients in the construction of irrigation works. That system of water distribution which served the Carthaginian littoral, both for irrigation of the vines and fields, and for the uses of the City of Carthage itself, was in every way superior to anything that the world knows today. For in its construction the system of elevated aqueducts was used, giving to the vineyardists of those times water under pressure. But this brief article is not to show the genesis of irrigation, but rather to briefly describe that system of irrigation at Lewiston, Idaho, wherein waterway construction has probably reached its highest development in modern times.

The situation which faced the Lewiston Orchard Company when they set about their project at Lewiston was one that must be faced by many communities in the years to come. It was that of an abundance of winter water with a paucity of summer flow; this situation was met easily enough by the expensive construction of an impounding reservoir in which could be stored the uncontaminated waters of a mountain watershed. This having been done, the problem of carrying the water from the reservoir to the land itself came up for consideration.

The capitalists behind the project had early set themselves the task of building up a fruit community which would have no superiors. With land of high fertility—most favorably situated suburban to a large and rapidly growing town—they had an unlimited supply of pure water, and to keep that water uncontaminated they decided to lay a pipe system, that each resident might not only have pressure water for agricultural purposes, but should have also in his home water free from contamination from seepage or other impurities, and thus free from the menace of those twin scourges of irrigated communities, typhoid and malaria.

This point then in the modern development of irrigation works has been reached at Lewiston—a city water system for agricultural land. The cost of such a plant, of course, was great and is held to be only possible in those developed and proven fruit communities where land values may be expected to go to many thousands of dollars an acre. On lands adapted to general agricultural purposes it is more than probable that the ultimate values would not warrant the expenditure necessary to equip lands with a city water plant.

It is stated by experts that the Lewiston Orchards plant will revolutionize the science of irrigation.

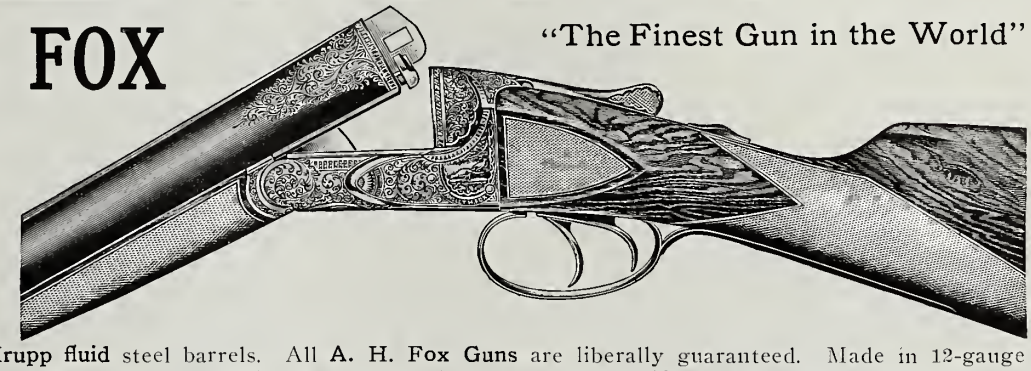
C. M. SHAW ROY F. DEAN

Dean & Shaw

Electrical Supplies and Fixtures
Scientific Electrical Construction
Home Phone 3 **Hood River, Oregon**

THE A. H. FOX

"The Finest Gun in the World"



The **genuine Ansley H. Fox** double barrel hammerless gun is the gun that has such few parts, hence its strength, as these parts are made much stronger where other gun parts are weak.

All **A. H. Fox Guns** have **Krupp fluid** steel barrels. All **A. H. Fox Guns** are liberally guaranteed. Made in 12-gauge only, and in five grades. For sale by all progressive dealers and jobbers on the Pacific Coast and by

THE A. H. FOX GUN CO. 4682 North Eighteenth Street, **Philadelphia, Pa.**

Read Colonel Roosevelt's Comment on Fox Guns in October Scribner's

Allen Fruit Caliper

Sizes fruit accurately and rapidly, and enables the practical grower to put up the commercial pack for the fancy trade. Live agents wanted in every fruit district throughout the world.

CORRESPONDENCE SOLICITED

ALLEN & ERFERT
Missoula, Montana

YOU MUST LEVEL IRRIGATED LAND

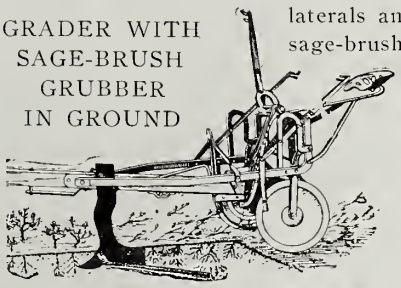
CUT DITCHES WITH IT, TOO

And slightly slope it from water supply if your farm is to earn good profits. The simple, quick, cheap way is to purchase a

20th Century Grader

And get the most money out of your land. The cuts (from pages 21 and 22 of our catalogue) show machine set for land leveling. Has reversible blade with which to throw up borders. Has combination blade for cutting laterals and open ditches. Has sage-brush cutter for grubbing out this troublesome growth. Thus this grader is adaptable not only to road grading, but to many other purposes. You ought to buy one. Send now for free catalogue.

GRADER WITH SAGE-BRUSH GRUBBER IN GROUND



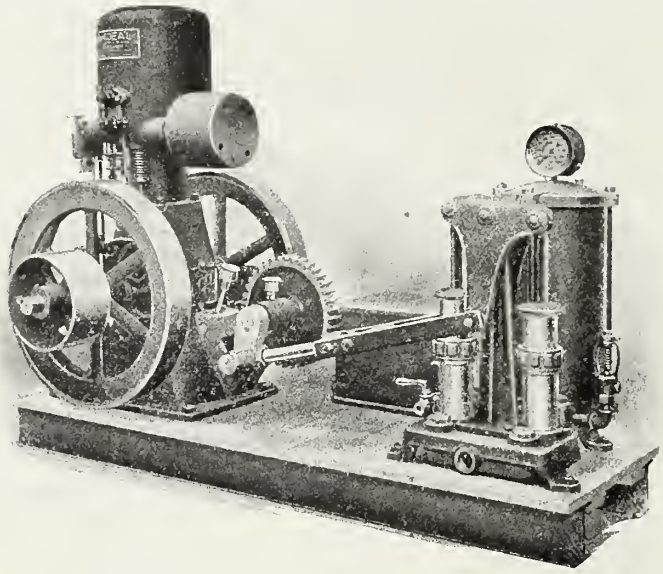
BAKER MFG. CO.
No. 742 Fisher Building **Chicago, Illinois**

THE HARDIE SIMPLEX

THIS NEW MEMBER OF THE "HARDIE" FAMILY IS PARTICULARLY WELL ADAPTED FOR THE GROWER WITH A SMALL OR VERY HILLY ORCHARD

Light Weight

It is strongly and compactly built and can be used in an ordinary farm wagon, with spray mixture contained in a barrel or cask. We can, if desired, mount same upon platform with the tank attached.



Rigid Construction

The engine base and frame of the pump jack are cast in one piece, giving ample strength and rigidity. This arrangement also insures perfect alignment of the gears. Cut steel gears are used entirely.

This machine is made in two sizes, of which a complete description and prices are given in our new catalog, which we would be glad to mail you upon request.

THE HARDIE MFG. CO.

HUDSON, MICHIGAN 22 Front Street, PORTLAND, OREGON

Land Plaster, the Great Soil Stimulator

Strengthens and invigorates all soils. You cannot afford to be without it.

OREGON LIME & PLASTER COMPANY

Mill: Lime, Baker County, Oregon Office: Worcester Building, Portland, Oregon

THE HARDIE LINE OF

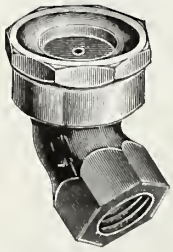
Spraying Machinery

Sold in Hood River only by

GILBERT & VAUGHAN IMPLEMENT CO.

"NEVER SPRAY, NEVER PAY"

Whose Ad is This?



This New Angle Nozzle Free

We will mail one postpaid without any charge to each of the first 100 fruit growers who fill out the following blank and mail to Drawer A, Better Fruit, Hood River, Oregon.

I think this is the advertisement of _____ (Firm name)

My name is _____

No. Acres _____ Apples _____ Pears _____ Peaches _____ Prunes

My address is _____ Town _____ State _____ R. D. No. _____

WOULD YOU LIKE OUR NEW CATALOG

On Spray Outfits? On Spray Materials?

YAKIMA HERALD PUBLISHING COMPANY

North Yakima, Washington, September 27, 1909.

"Better Fruit," Hood River, Oregon.

Gentlemen: We wish you the best of success with the special. The country needs good fruit journals, and you are certainly doing your part towards giving the fruit-growers just what they need.

At any time we can be of any service to you, command us. Yours very truly,

Yakima Herald Publishing Company,
By Geo. N. Tuesley.

"IN addition I had with me a number 12 Fox shotgun. No better gun was ever made."—Colonel Roosevelt in Scribner's Magazine for October, 1909.

NOTE.—The editor bought a Fox shotgun some time ago and felt so pleased with it that it now becomes a great gratification to have it recommended by Ex-President Roosevelt, and I feel justified, therefore, in recommending every one of the patrons of "Better Fruit," who are in need of a shotgun, to write the Fox Gun Company, 1652 North Eighteenth street, Philadelphia, Pennsylvania, for their catalogue, and don't forget it will be a favor to "Better Fruit" if you will mention our name. It helps give us reputation and prestige to have our subscribers do this.

HEADQUARTERS FOR
CENTURY
SPRAY PUMPS
Hose, Nozzles, First-class Plumbing Supplies
C. F. SUMNER
Successor to Norton & Smith
HOOD RIVER, OREGON

LETTER OF PRESIDENT OF NATIONAL CONGRESS

That there is a demand for a National Horticultural Congress was more than realized by the success of the first congress, held in this city in December, 1908, and the officers elected for the present year have been urged by those interested in the enterprise to publish this booklet, containing the important features of the proceedings, thereby giving greater publicity to one of the grandest enterprises ever conceived for the development of horticultural interests.

The value of interchanging ideas can be increased by uniting the exhibition of the choicest products with the discussions and lectures that far overshadow any interest that would be attached to any local or state enterprise.

We feel justified in appealing to the progressive men of our country who are interested in horticulture to forward this great movement, that has so much in store to promote and develop this, one of man's noblest callings. We trust the congress of 1909 will be of such magnitude that its benefits will be far-reaching and assure the permanency of the institution.

This year everything will be on a much broader scale than last year. The date has been set a little earlier (November 14 to 20), as it is believed this will be more convenient for the greatest number.

If you are at all interested in horticulture, it will be well worth your time to go through this little book. It contains many valuable suggestions, and the addresses are by men who are recognized authorities on the subjects presented.

Very truly yours,

W. S. Keeline, President.

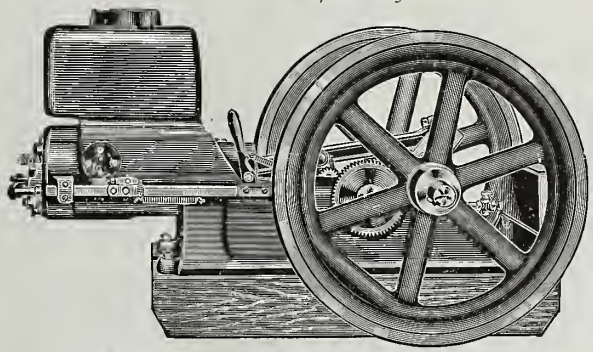
PERSONAL ORCHARD HEATER EXPERIMENTS

Editor "Better Fruit:"

After reading about all the benefits derived from the use of orchard heaters by the Colorado fruit growers last spring, I made up my mind that the next question for the Yakima fruit growers to take up was the question of orchard heaters. I am satisfied that the heaters would be a great benefit to this or any other country. It would enable the growers to plant tomatoes and cantaloupes earlier in the season, knowing that

GOOD COMBINATION FOR IRRIGATING PURPOSES

The Waterloo Boy Gasoline Engine
Guaranteed for five years



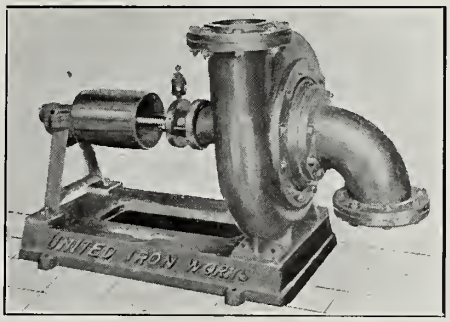
2-horsepower Waterloo Engine, $90
4-horsepower Waterloo Engine, $160
8-horsepower Waterloo Engine, $300

A complete irrigation outfit that will deliver 12,000 gallons per hour 25 feet perpendicularly, or equal pressure,

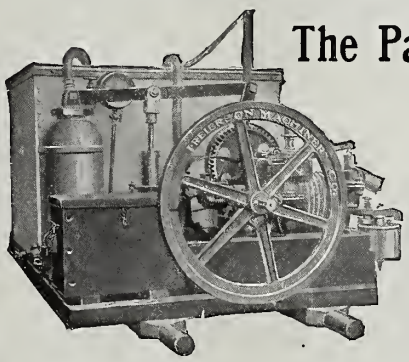
$250.00

Larger outfits at proportionately low prices. Write us for information

The Eclipse Centrifugal Pump



2-inch Eclipse Pump, $56
3-inch Eclipse Pump, $80
4-inch Eclipse Pump, $100



The Pacific Power Sprayer

The Machine for your work. Simple, durable, economical.

Price $150

and up, according to outfit. Let us know your requirements

The Swenson Malleable Grubber

The best stump puller on the market today. Every casting absolutely guaranteed, flaw or no flaw. Write us for descriptive circular

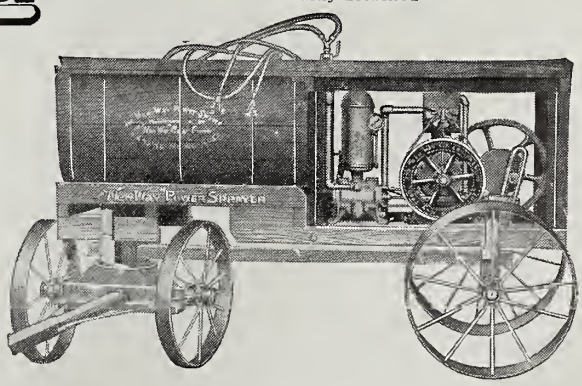
We can fill your every want in the machinery line. Let us hear from you

Reierson Machinery Co.

182-4-6 Morrison Street PORTLAND, OREGON

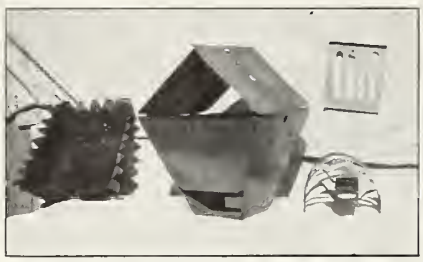
THE "New-Way" POWER SPRAYER
Always ready for any work in any climate
Easily detached

IS EQUIPPED WITH THE FAMOUS
"NEW WAY" AIR COOLED ENGINE
Gasoline, Distillate or Alcohol Fuel
Carries high pressure without the usual vibration or strain, and is the most practical, durable and economical machine ever built for spraying. Use your own running gear if you prefer. Write us today for Spray Catalogue No. S-8



Fruits of High Quality Follow this Quality Sprayer

John Deere Plow Co.
Portland, Oregon
GILBERT & VAUGHAN
Local Agents Hood River, Oregon



Buehring's Perfect Orchard Heater

Will save your fruit crop from Jack Frost. Used with absolute success last spring. For a limited time I will offer this combination coal and oil heater, fully protected by letters patent of June 8, 1909, for sale, state rights or entire patent. For particulars address

Frank Buehring, Grand Junct'n, Colo.

Burpee's Seeds that Grow

140 VARIETIES *ANY QUANTITY*

Plenty of stock in our 40,000 pounds

Growing Plants as Season Requires
All Makes High Grade
Pruning Tools
Garden Tools
Hose and Spray Nozzles
International Stock and
Poultry Food
International Remedies
Incubators and Brooders
Everything for Building
Everything for Furnishing

Stewart Hardware & Furniture Co.

22,000 feet floor space Hood River, Oregon

Look Out!

for imitations of

PEARSON'S
CEMENT COATED
WIRE NAILS

as they are decidedly inferior and do not possess the merits of the genuine, no matter what counterfeiters may say.

ALWAYS

specify "PEARSON" and you will get your money's worth. If your dealer does not supply them, write us and we will.

Manufactured only by the

J. C. Pearson Co.

Boston, Massachusetts

A. C. RULOFSON CO.

Pacific Coast Sales Agents

315 Monadnock Bldg., San Francisco, Calif.

they could protect them from frost. And, just think of how many strawberries could be saved every spring, and peaches, sweet cherries, apricots, pears and, as a matter of fact, all kinds of fruit. There is not a locality in this country that would not do better if it could protect its fruit from frost.

The first question to take up is what orchard heater to use. About four weeks ago I was shown one of the makes and I made up my mind that I wanted that one. But last week I was told to take a look at another make, and there I was; two different makes and each one supposed to be the best. Well, the first thing I did was to ask the price of each, and was told that one was about eight or ten cents less than the other, and supposed to be as good. So you see that at first I was in favor of the cheapest one, and so would most every other man have been.

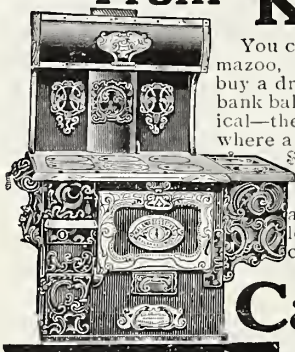
But a thought came to me that it might be a good idea to try them both and see which one I would use myself and recommend to my friends. I will now give you my test. I got some crude oil and put exactly one gallon in each and started the fire at 8:15 a. m. About 10:30 the fire went out of one. I lighted it again, but in about ten minutes it went out again. I started it again. At 11:30 that same heater was burning a very small blaze; not enough to give any heat and at 12:15 it went out for good. There was about one inch of oil left in the bottom of the heater, but it would not burn any more. Now the other heater was started at the same time and it gave a good flame up to 1:15 p. m., and when it went out the oil was all burned. Then I was satisfied that the one which cost the most at first was the cheapest in the long run, and the safest to use.

Now, for the benefit of others, I will give the names of the two heaters. The one that burned the oil so fast and snuffed out of its own accord, is the Troutman heater. The other, that gave such good results, is the National heater. Now, I want the people to understand that I did not make this test to help or hurt anyone, but just for myself, and the others can have the benefit of it.

E. Remy.

North Yakima, Washington.

Here's Something New From Kalamazoo



You can save enough real money in getting a Kalamazoo, to buy most of your fuel—pay your taxes, buy a dress or suit of clothes or materially increase your bank balance. You get the best made—the most economical—the most satisfactory stove or range to be had anywhere at any price. With an actual cash saving of from $5 to $40 on your purchase. Hundreds of thousands of satisfied users have told us this is true.

We make it easy for any responsible person to own a Kalamazoo. We are the *manufacturers*. You get lowest factory prices, 360-days' approval test, and our convenient terms. Take your choice—

Cash or Credit

Write for Catalog No. 574 and special terms. It gives you all the necessary information about buying and using a good stove or range. Compare our prices and quality with others, prove for yourself what you save in buying a Kalamazoo for cash or on time. *Freight prepaid. Safe delivery guaranteed.*

Kalamazoo Stove Co., Mfrs.
Kalamazoo, Mich.

This Oven Thermometer saves fuel and makes baking easy.

"A Kalamazoo Direct to You"
TRADE MARK REGISTERED

Malthoid Roofing

The roofing that always makes good. No matter how big or little the job, Malthoid fits every condition and renders a roof service that is absolutely incomparable. If you want the roofing that is right—demand Malthoid. Made by the original makers of ready roofings.

THE PARAFFINE PAINT CO.
San Francisco Portland

Stewart Hardware & Furniture Company, Distributors, Hood River

IMPORTANCE OF APPLES—OUR NATIONAL FRUIT

What the olive means to Spain and the grape to the Rhine country, apples mean to us. They are our national fruit. It is the apple which has won a high regard for American fruit in European markets. No other nation in the world has developed apple culture to so high a point of excellence. And still the apple crop of this country has alarmingly decreased in recent years —from 69,000,000 barrels in 1896 to 25,000,000 barrels in 1907. This has been due to deterioration of orchards, especially in the East, where the trees have been neglected. And all the time the demand for good apples is increasing rapidly in this country and abroad. High prices result and are likely to continue for years to come. On well drained and irrigated soil apples are a most profitable crop.

The apple belt, as it is called, extends from coast to coast through the northern half of the continent. Apples thrive best in sunshine and frost. The former enriches their flavor and color and the latter starts the sap into branches and "firms up" the flesh for shipping. The finest apples in the world are grown on irrigated land in the Northwest. The soil is rich in apple-producing elements, nitrogen and ammonia, and the climate is ideal. The perpetual sunshine of the arid season makes the fruit mellow and sweet and autumn frosts harden it for storage. Irrigation is a great advantage. It affords the trees moisture just when they need it, and as much as they need. Experiments have shown that just before harvest, irrigation makes a noticeable improvement in the fruit. In thirty-six hours the apples become plumper and more beautiful and are more easily picked.

The wonderful crops of the Northwest apple country are as much due to the scientific care of both fruit and orchard as to the soil itself. A ten acre orchard in Montana, for instance, is said to net $5,800 in annual profit when the trees are ten years old. This would not be possible without intensive cultivation and vigilant care of both trees and fruit. The soil is thoroughly cultivated, mulched, irrigated and drained. The trees are planted at exactly the right intervals—they are pruned and trimmed every few weeks to eliminate the suckers and let in the sunlight. Then the soil is fed as you would feed an animal. The buds are sprayed to intercept the first appearance of moths and other enemies, and, when the fruit is ripe, it is hand-picked with the utmost care. No dropping or pouring into baskets is permitted. Each apple is gently deposited alongside its neighbor. The packing and sorting are done by experts, who would be penalized for shipping a wormy piece of fruit. In some states this is a statutory offense, punishable by fine. With such gathering of fruit and such storage, apple-growing pays.

The Northwest produces the great bulk of our apples and the best ones on irrigated soil. Washington has a number of famous fruit valleys—the Columbia River region, the Yakima Valley, the Wenatchee, the Okanogan, and the Spokane Valley. In Oregon might be mentioned the Hood River Valley and the Rogue River Valley among others; and in Idaho, the Boise and Payette Valleys, the Twin Falls Country and other territory along the Snake River. Besides the Denver Dis-

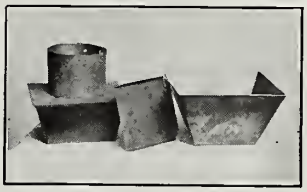
THE NATIONAL ORCHARD HEATER COMPANY

Incorporated

This Heater saved $3,000,000 worth of fruit in Grand Valley

And now we want to say, Mr. Fruit Grower, prepare to fight the frost. It has come; it will come again. Make up your mind what you want, whether it is sawdust, coal or oil, and buy it. Don't wait until the last minute and run into town and kick because it is not lying there ready for you. You can rest assured that these Orchard Heaters will not be carried in stock by dealers like cigars or coffee.

We will say this: We are willing to put the NATIONAL down by the side of any Orchard Heater made, either coal or oil, for a pull of from five to eight hours. A little test of from two to three hours is not a demonstration of the merits of any heater; it simply demonstrates the fact that you have a pot you can burn oil in.



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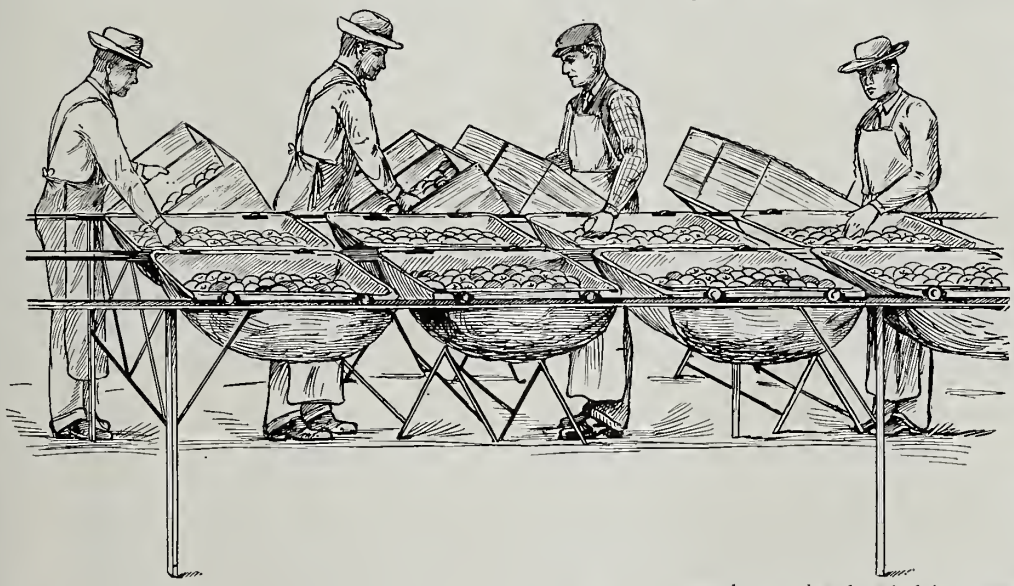
DOES IT PAY?

A FEW POINTS IN REGARD TO THE QUICK PACK FRUIT DISTRIBUTOR



1. Any number of grades of apples, distinguished as to size, color, or freedom from blemish, may be handled simultaneously.

2. The work is so divided that part of the workers do the sorting and part the packing. Each packer stows away but 20 or 25 per cent of the number of grades that are being run. This means that each packer can work at the highest speed without any sacrifice as to the quality of the work done.

3. Sorters and packers pace each other and the loss of time in doing a job is reduced to an absolute minimum, a matter of considerable importance when help is scarce or there is any need for dispatch, besides meaning an actual saving in cost of handling.

4. This new system makes it possible for a gang of eight men to work in a space but twelve feet long by nine feet wide, yet giving every man ample room. This means that every worker is under the direct observation of the foreman. No neglect is possible and a pack of the most absolute exactness in grade is assured.

5. The Quick Pack System will more than pay for itself in one season in labor saved and NO BRUISING OF APPLES.

6. With an outfit for four men, costing $50.00, 5,000 boxes of apples can be sorted and packed in a season. The outfit is entirely collapsible and the packing gang can take it from place to place. It can be set up anywhere, and after the packing is done it is folded up and put away.

7. The Quick Pack is recommended by Professor Thornber, of the Pullman State Agricultural College of Washington, as a big step in the careful handling of fruits and as the coming thing for the fruit man.

8. A Quick Pack will be furnished to any responsible packer on free trial.

DYAR & BACON

Manufacturers

SPOKANE, WASHINGTON

trict in Colorado, there are the Grand Valley and the Uncompahgre in the western part of the state. In Montana the Bitter Root Valley is one of the most famous apple regions of the Northwest. It produces marvelous fruit. There are great apple possibilities in Utah and other adjoining states remaining to be developed by labor and irrigation. Good judges predict that the apple crop of this country will be nearly trebled in five years, with improved cultivation and additional acreage.

From November 20 to December 4 of this year will be held in the Coliseum, under the auspices of The Chicago Tribune, the United States Land and Irrigation Exposition, which will provide authoritative, graphic information about the vast land opportunities now opening up in many states for homeseekers, farmers and investors. There will be exhibits of the wonderful fruits of this virgin soil from all sections of the country. Elaborate panoramas will show what is being done to irrigate, drain and cultivate it. Arrangements have been made for government exhibits of great value to the farmer and of vital interest to every lover of American soil.

WE acknowledge receipt of a beautiful song, "In the Land Where the Big Red Apples Grow." The words are very attractive, while the spirited march time music is full of rich harmony It will undoubtedly become popular in the apple-growing sections and for sending to Eastern friends. It can be had from music dealers, or by sending 25 cents to F. A. Thole, publisher, 315 Arcade Building, Seattle.

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There isn't any other
spreader that does the
work so successfully,
so completely
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Bull Dog Double Beater Wheel with long and short teeth
One of the greatest trouble and draft savers on the machine. An endless conveyor makes big loads possible. Conveyor slats are hinged and clean automatically—self-oiling bearings insure least wear from friction in vital parts. No-Choke Box, the wagon box abruptly widened to loosen manure as it reaches beater. Two and three-horse adjustable hitch. That's why the Litchfield Spreader entails the Lowest Cost, Lowest Running Expense and Least Repairs.
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This is evidence from your neighbors about the successful operation of the Litchfield, right here.
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"By reason of its construction it is lower than other spreaders, consequently easier loaded--light in draft--doesn't work my team to death—the one lever makes it easy to handle. Must say it spreads the manure very evenly—substantial machine combined with simple construction and durability—a first-class machine."—L. M. Hesse, Hillsboro, Or.
WASHINGTON
"Strongly constructed—one of the girls can operate it account of its simplicity—can be stopped when half loaded—will start again without first cleaning cylinder—lighter of draft—no danger tires or wheels coming off—no checking of hubs or spokes. One of the most satisfactory machines ever on farm"-G.G.Fullerton, Dayton, Wn.
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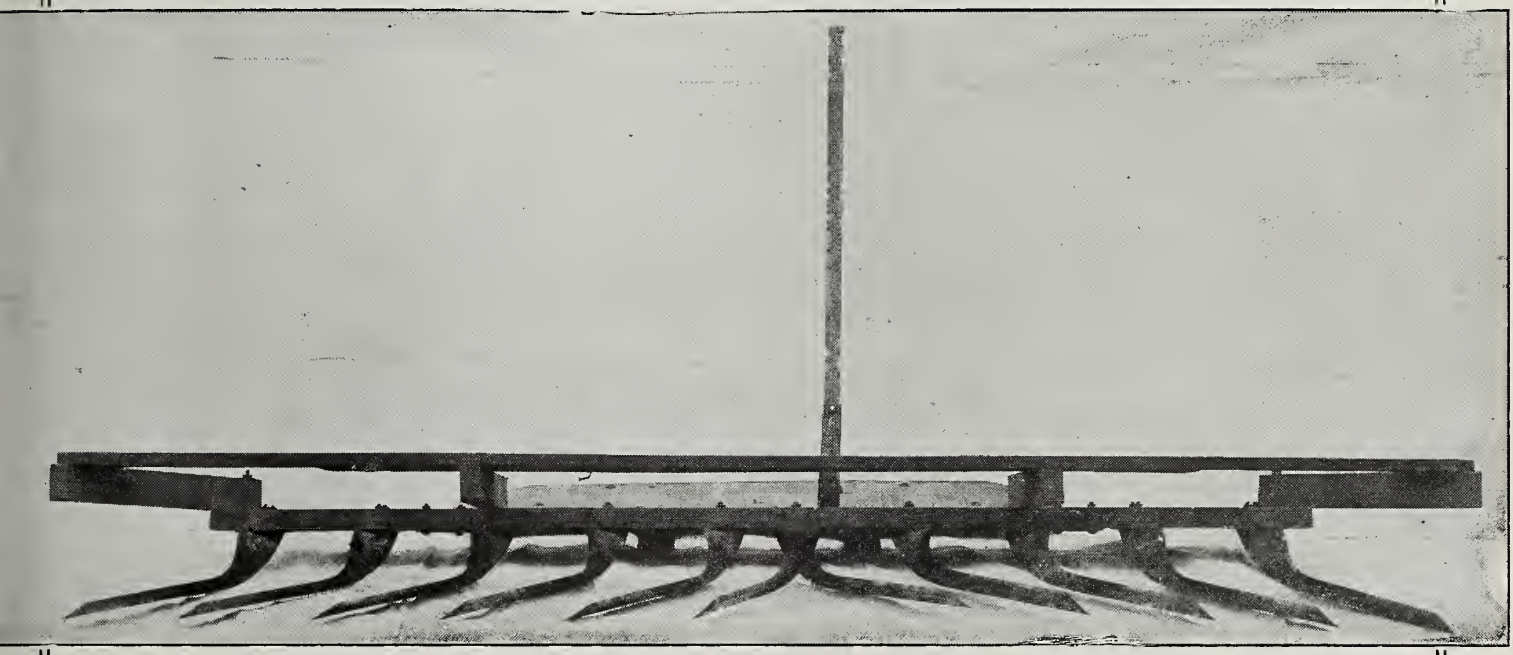
THE KIMBALL



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In advertising in "Better Fruit" we know that we will be securing subscribers of character and quality. The Pacific Monthly does not appeal to the reader of cheap fiction. Its illustrations are works of art. Its stories are clean, wholesome and readable, and are contributed by such well known writers as Jack London, Max Nordeau, Rabbi Stephen Wise, Wm. Winter, C. E. S. Wood, C. B. Clark, Jr., and other equally famous writers. The Pacific Monthly is a magazine that will be read with interest by every member of your family, and when you have read it you will want to send it back East to the folks at home.

For those who wish to purchase their magazines in connection with The Pacific Monthly, we submit the following list which we can thoroughly recommend.

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Established 1886 — NAMPA, IDAHO

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Our valley is an agricultural paradise.
We have hundreds of prospering ranches.
We have the oldest orchards in the state.
We have the earliest strawberries in the state, year after year.
We have a climate that is right, and gardens grow nearly all winter.
We have the noted Blalock fruit farm of 1,500 acres.
We have the famous Dumas orchard of 100 acres, which has produced 69,000 boxes of high grade apples during the past two seasons.

We have the soil, and the water in abundance, and our valley has been making good, as a place to farm and a place to live, for the past fifty years—yes, we emphasize that latter point, for it is of more importance than is sometimes understood. WALLA WALLA VALLEY IS A GOOD PLACE TO LIVE, for here agriculture goes hand in hand with a long established "civilization." In fact, the chief city of the valley, in addition to offering every ordinary convenience and benefit, is the home of the famous Whitman College, now accumulating an endowment of $2,000,000, and ready today, with the scores of other schools throughout the valley, to welcome your children to opportunities equal to those of the East.

ASK QUESTIONS

Commercial Club, Walla Walla, Wash.

Newtowns Yield $1800 per Acre

James Lacey on an acre of Newtowns marketed 791 boxes of first grade apples, which brought $1,698.55. He has left fifty boxes of seconds, which will sell for about $1.50 per box, and bring the total gross sales from one acre of Newtowns up to $1,800. The returns from his three and a half acres of bearing apples, all kinds, are $3,801.76 for first grade apples alone, and second grades will fully pay for the labor of taking care of the crop. This makes an average of over $1,000 an acre profit.

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Facts that affect you—your family

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You can begin today. It pays to see us
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From ten acres up. Prices from $40.00 to $250.00 an acre. Raw land and bearing orchards. I have sold over one thousand acres this summer. I refer you to the Merchants National Bank of Portland, Oregon

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NONE BETTER GROWN

We grow the best; get the best of prices. No crop failures or frosts. Best of transportation, scenery and water. Close to Portland. Land steadily advancing. Get an orchard this year and be independent.

Investigate yourself or send to us for literature

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HERMISTON

WHERE FRUIT RIPENS FIRST

WHY NOT MAKE A HOME WHERE THE GOVERNMENT GUARANTEES THE WATER?
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20,000 acres of Fruit Land, under the

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Placed under water at the expense of $1,250,000, backed by the government, water under the charge of government employes. $800.00 received for the potato crop on three acres, the first year from the sage brush. $42.00 for the alfalfa cut from one acre, one cutting—the first season's cut. Pure water in wells at from twenty-five to seventy feet depth, will never be contaminated by irrigation. Elevation from 300 to 500 feet above the sea. This project is past the experimental stage, we know, and can show you. Acknowledged by the highest governmental authorities to be the GEM of all the reclamation projects in points of fertility, climate and transportation. We have 5,000 acres of the best of the whole territory for sale in tracts from one acre up to forty acres, and at prices and terms to suit all.

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Located in the Center of an Empire—A quick and profitable market is certain for all products—rail and water transportation to the mining centers, the cities of the Northwest, and the great markets of the Orient and Alaska.

Umatilla Irrigated Lands Co., Inc.

Umatilla County Hermiston, Oregon

STANFIELD—THE STIRRING

IN UMATILLA COUNTY, OREGON

O. R. & N. Railway 170 Miles East of Portland

This picture shows a young peach orchard belonging to Page & Son of Portland, Oregon. This orchard was planted in March, 1909, on part of the Furnish-Coe lands adjoining the new town of Stanfield. As a test of the capacity of volcanic ash soil to retain moisture, both cultivation and irrigation were suspended in June. The weeds shown between the rows appeared after that time, and volunteer watermelons came up where melons were grown in 1908, but where none were planted in 1909. These melons grew and matured without care or cultivation, were discovered in the weeds and taken to the Eastern Oregon State Fair at Pendleton, where they took first premium. Not a tree dead or missing in fifty acres. Stanfield took twenty-five other first prizes at this fair on products of the soil. The picture also shows the beautiful lay of the ground for cultivation and irrigation. No brush or timber to clear off, no hills to climb or level, as easy to plant and care for as a Dakota wheat field. There are 10,000 acres of the Furnish-Coe irrigated fruit lands just like this. They have all the essentials of success in fruit growing: soil, water, climate, elevation, market, and transportation by both rail and river. The Furnish-Coe project is a new one, but the ditches are in, the water is available and abundant, and the prices yet low but advancing. Messrs. Page & Son, who own the above orchard, have been for thirty years in the fruit commission business in Portland. They are experts in all that pertains to fruit and fruit production, and are doing their only planting of orchards at Stanfield.

STANFIELD—THE TOWN THAT STARTED RIGHT

Though only six weeks old, Stanfield has half a score of fire-proof business buildings under construction, many blocks of cement sidewalks and many new and neat cottages and bungalows. More than 100 people are living in tents, as mechanics and material cannot be had fast enough to supply the demand. Fire limits have been established and water and sewer systems provided for. If you want to know more about Stanfield and the irrigated fruit lands adjoining, write

Geo. C. Howard, Secretary Commercial Club Stanfield, Umatilla County, Oregon

We clean forgot to tell you that the O. R. & N. is building us the nicest brick and stone depot outside of Portland, finished in antique oak and is a hummer. We are proud of it. Write us.

For Homes and Irrigated Lands

IN

IDAHO'S FAMOUS FRUIT BELT

Write

GRAEF REAL ESTATE CO.

The Home of the Perfect Jonathan Caldwell, Idaho

Peaches, Pears, Apples, Apricots, Grapes, Cherries and all Small Fruits Reach Perfection

IN THE

EMMETT FRUIT BELT

EMMETT, IDAHO

Peculiarly Adapted to Fruit Culture by Location, Climate and Water

Situated in the upper end of the Payette Valley, on the Idaho Northern Railroad, twenty-five miles from Nampa, Idaho, on the Oregon Short Line Railroad.

Twenty-four thousand acres recently brought under cultivation, every acre of which is highest type of fruit land. Though the Emmett fruit section is yet in its infancy, Emmett peaches have captured all prizes wherever exhibited. Surrounded by hills that protect from frosts and winds. Unlimited supply of water for irrigation. Deep volcanic ash soil.

Average maximum temperature during July and August, 94 degrees; average minimum, 52. Average minimum temperature during January and February, 26 degrees; average maximum, 46. Altitude 2,300 feet. Average rainfall, 14 inches. Lands range in price from $60 for raw land to $400 for improved land. Rare opportunities for the settler and fruit grower. Emmett is a prosperous town of 2,500 people. Has splendid schools, churches, well stocked stores, water works and electric lights.

WRITE FOR HANDSOME ILLUSTRATED BOOKLET TO

Secretary Commercial Club Emmett, Idaho

PAYETTE LAND & IMPROVEMENT CO., LTD.

Established 1894

Lots on Easy Terms Irrigated Tracts, Small and Large

Fruit and Orchard Land

We are the Owners of Park, Melcher, Fairview, Payette Heights Additions

P. H. BROWN, Secretary PAYETTE, IDAHO

Both summer and winter climate ideal. Excellent schools. The best kind of neighbors. The Government will expend $15,000,000 in the development of this garden spot by irrigation. If you are not doing as well as the people mentioned here why not try this famous MONEY-MAKING VALLEY where so many have proven what can be done?

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Scenic Highway through the Land of Fortune

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IN THE

Yakima Valley

Washington

The United States Government is placing under irrigation 480,000 Acres of Rich Land. There are now 150,000 acres of irrigated land in this Wonderfully Fruitful Valley and prices asked for it are reasonable.

The following statements of crops raised in 1907 show the incomes that are derived:

H. M. Gilbert raised $19,295 worth of mixed fruit on 13 acres.
W. I. Huxtable raised $13,000 worth of peaches on 8 acres.
J. H. Forman raised $3,000 worth of pears on three-quarters of one acre.
Mrs. W. L. Wright raised $13,000 worth of apples on 8 acres.

Northern Pacific Railway
is the
Only Direct Line

Yakima Products, one year old; they keep well

Opposite Post Office
NORTH YAKIMA, WASH.

TEN ACRES IN FRUIT, OR FIFTY OF FARM LANDS IN THE

YAKIMA VALLEY

MAKE A FAMILY INDEPENDENT FOR LIFE

Yakima County has 173,000 acres now under irrigation; 125,000 acres farm lasds in potatoes and vegetables, hay, grain, hops, nursery stock, melons, gardens, etc.; 33,000 acres orchard lands planted to apple, peach, cherry, pear, nut, etc., trees; 15,000 acres orchard lands not yet planted. *Note that only about one-fourth of irrigated land is orchard land.* We know orchard lands from farm lands, and we know the orchard and farm business here. *Our advice is reliable and yours for the asking.*

WRITE US OR CALL.

Reference: Any Banker or Merchant in North Yakima.

Yakima Valley Land and Investment Co., Inc.

J. B. ERNSDORFF, President
T. J. MURRAY, Secretary and Treasurer
Real Estate, Investments, General Insurance, Loans, Bonds, Rentals

YAKIMA FRUIT LANDS

WE handle them, raw and improved, and have been selling them for years on such terms that every money-saver can buy a Yakima home. Write us about the new government (Tieton) project here, which will begin delivering water next spring. Thirty thousand acres of these raw lands in small tracts at $75 to $175 an acre, on easy annual or monthly payments; ten years to pay for water right at exact cost; guaranteed by the government.

TENNANT & MILES

INCORPORATED

FREE ILLUSTRATED BOOKLET ON REQUEST

NORTH YAKIMA, WASHINGTON

SUNNYSIDE FRUIT LANDS

We have four hundred and eighty acres of first class fruit land under the government Sunnyside canal, in sage brush, close to school and railroad; no rocks; purely volcanic ash soil—that we will subdivide to suit purchaser—and sell or exchange for $100 an acre

CALL AT OUR OFFICE AND INVESTIGATE

Spokane Sunnyside Land Co.

SMITH & YOUNG, Owners Office next to Sunnyside Hotel, **Sunnyside, Washington**

WHATEVER YOU WANT TO KNOW ABOUT NORTH YAKIMA, OR YAKIMA VALLEY, A REQUEST TO US WILL BRING RELIABLE INFORMATION

Tieton Lands in Ten, Twenty and Forty Acres

Reservation Lands

Improved Fruit Lands

Bearing Orchards

Suburban Homes

City Investments

Yakima Land Company, Inc.

301-302 Washington Hotel Building

NORTH YAKIMA, WASHINGTON

We have plenty of land—let us know what you want—we can show you the right land

Our Tieton lands are under first unit. Receive water April 1, 1910

Deep volcanic ash soil, free from rock

Easily irrigated

Near goverment electric plant to cost $75,000

Buy Tieton lands now and be ready for Spring

Arcadia Orchards Company–Irrigated Orchards

The Land of Sunshine *The Center of the Best Fruit Belt in Washington*

Only twenty-two miles from Spokane. Excellent transportation facilities, ideal climate, irrigation by gravity

Our Plan: We plant, cultivate, irrigate and care for your orchard for four years, and pay your taxes for five years. You may remain at your present occupation while we bring your orchard to bearing. No charge for water. The largest private irrigation project in the West. Buy now, before a further increase in values. Easy terms. Send for literature.

ARCADIA ORCHARDS COMPANY Hyde Building, SPOKANE, WASHINGTON

"Oregon-Washington Limited"

The New Fast Train

Between

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AND
CHICAGO

O. R. & N.

Oregon Short Line
Union Pacific R. R.
Chicago & Northwestern Ry.

FIVE THROUGH TRAINS DAILY TO THE EAST

BLOCK SIGNAL PROTECTION

Modern passenger equipment. Through dining car service. Tickets and sleeping car reservations at City Ticket Office, Third and Washington Streets, Portland, or any O. R. & N. agency elsewhere

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MOSIER

ALSO CALLED EAST HOOD RIVER
SIX MILES EAST OF HOOD RIVER

In Large or Small Tracts

Prices at present are very low, compared to districts which have been exploited by large publicity campaigns.

On the O. R. & N. and Columbia River. Splendid shipping facilities, good fruit growers' association, progressive community, fine climate, beautiful scenery, pure water.

Being rapidly developed by intelligent men with capital. For new illustrated booklet and further particulars about orchards and orchard land

WRITE

Geo. A. Chamberlain Mosier, Oregon

MOSIER

The natural home of Newtown and Spitzenberg apples

Apple Land

Good, Better, Best, at Prices Lower than Less Valuable Land in Other Localities

MOSIER APPLES AT HOOD RIVER FAIR

Scenery, climate, water and general conditions unsurpassed for residence, and for the raising of all kinds of fruit. Mosier is a Siamese twin to Hood River (six miles east) in the fruit industry.

Further information gladly furnished by

Commercial Club of Mosier Valley

MOSIER, OREGON

HOOD RIVER

APPLES AND STRAWBERRIES

That's all

The World Knows the Rest

The fruit growers had $36,000 in the bank in 1901. Today the three banks carry $1,000,000.

Fruit pays from $500 to $1800 per acre and is all sold at the highest prices while still on the trees.

We have 40,000 acres left awaiting some one to come to help us improve it. Do you want a chunk?

Electric light and phone service covers the valley and for pure water, healthy climate and excellent scenery we have them all going.

Write the Commercial Club today for complete information. Better still, pack your grip and come with it.

JONATHANS NEWTOWNS

NUTS STRAWBERRIES CHERRIES BERRIES

THE LAND OF OPPORTUNITY

APPLES PEARS PLUMS PEACHES PRUNES

LOCATED across the Columbia River from Hood River, Oregon, the White Salmon Valley offers the greatest opportunities of any land on earth to fruit growers. Where apples, cherries, pears, peaches, prunes and strawberries grow to perfection. A few dollars invested in fruit land today will return to you in a very few years sixty-fold. The soil, climate, water and scenery are unsurpassed by that of any country. Build a home where you can enjoy peace and plenty the remainder of your life. Fruit lands cleared, planted and cared for until in a bearing condition.

Display made by the White Salmon District, opposite Hood River, at the National Apple Show in Spokane

We have secured 200 acres of absolutely the best fruit land in the White Salmon Valley, which we have divided into small tracts of ten acres each, and we are offering these tracts for sale at $40 to $75 per acre, on very easy terms. Land lies well; it has a gentle slope to the north; water can be piped from a large spring on the land; spring will furnish all the water that a family on each tract will need for domestic purposes. Eighty acres of this tract is partially cleared; can be prepared to plant to trees for $25 to $35 per acre. Balance of land has some timber and will cost more to clear.

This tract is located fifteen miles from the town of White Salmon, thirteen miles from railroad station and boat landing at Underwood, two miles to White Salmon River, half mile to stage, daily mail and telephone lines, less than a mile to school, church, post office and saw mill, half mile to Mount Adams Orchard Company, an incorporated company now planting 500 acres to winter apples.

We have some bargains in orchard and general farm lands in and near White Salmon, also large and small bodies of timber land, cheap.

WRITE US FOR DESCRIPTIVE MATTER AND PRICES

Estes Realty & Investment Co.

WHITE SALMON, WASHINGTON

SPITZENBERGS WINESAPS

The Red Apple of the Sutherlin Valley is King of the Apple Family

Orchard Homes adjoin the New and Strictly Modern City Known as Sutherlin 185 Miles South of Portland

Ten and Twenty Acre Orchard Homes in Southwestern Oregon

The Sutherlin Valley is the ideal place for an orchard home. One can enjoy good health, happiness and a profitable independence. I have never seen anything more beautiful than the Sutherlin Valley, nor a project as modern and as well managed.

Respectfully yours,

J. RAYMOND DUNPHY,

SPECIAL REPRESENTATIVE { "OREGONIAN," PORTLAND / "POST INTELLIGENCER," SEATTLE

In the Sutherlin Valley there are no sand storms; no extreme heat or cold; no frosts. The soil is the finest of fruit soils. System of irrigation is perfect. Drainage is perfect. All modern conveniences, paved streets, electric lights, telephone and convenient transportation. The Scenery is magnificent, and there is exceptional fishing and hunting

Price of Tracts $300 per Acre, Terms Within Reach of All
Orchards cared for until bearing. Write for descriptive literature

Luse Land and Development Co., Ltd.

Sutherlin, Douglas County, Oregon, and St. Paul, Minnesota

SPOKANE VALLEY
IRRIGATED FARMS

HOMES IN OUR DISTRICT

THE WAY WE IRRIGATE

What Makes the Settlers of the Spokane Valley Happy?

IT'S THE GRAVITY SYSTEM OF IRRIGATION
IT'S THE SOIL AND CLIMATE
IT'S THE TRANSPORTATION FACILITIES
IT'S THE CITY CONVENIENCES NEAR BY
IT'S THE EXCELLENT MARKET CLOSE AT HAND
IT'S THE BEAUTY OF THE HOME LOCATION
IT'S THE STABILITY OF THE SPOKANE VALLEY LAND AND WATER COMPANY

THE RIVER CANAL

Carries 250 cubic feet of water per second, and will water 25,000 acres. Gravity system. Canal 20 feet wide and carries 5 to 7 feet in depth. An abundant supply.

OUR LAND IS CHEAP

This excellent opportunity for fruit raising is open to the public at prices far below the older irrigation districts. It has proven its value for winter apples.

INVESTIGATE FOR YOURSELF

Ten acres secured now means a profitable investment. A paying business for you. An excellent living from crops raised between the trees. A home to be proud of in the Spokane Valley. A growing apple crop which will make you independent. The increase in values which will make your fortune.

FACTS ABOUT APPLE RAISING

We have just printed a new, handsomely illustrated booklet giving some valuable data regarding fruit raising. Estimates of cost. Estimates of earnings. Statistics. Send for it. It is free.

BECHER & THOMPSON, INC.

401 Sprague Avenue

Spokane, Wash.

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West Farms
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HOME LIFE